Sa vz. 58 Sporter Rifle Instructions Manual

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CHAPTER 1 - GENERAL

1. Purpose and properties of the Sa vz. 58 Sporter rifle

The Sa vz. 58 Sporter rifle (hereinafter also referred to as the 'rifle') can only fire in the semi-automatic mode. The firing is effective up to 600 meters at individual ground targets and 800 meters at group targets. The sight is adjustable from 100 meters to 800 meters in 100 meters increments. Additionally, the rear-sight leaf is provided with a 'U' ('universal') mark for firing at moving targets. The Rifle is designed for sports shooting as well as hunting.

Fig. 1 The Sa vz. 58 Sporter rifle /general view from the left/

The maximum range of fire is 2,800 meters. The muzzle velocity of the bullets is 705 meters/second and its effective range is the maximum range of the gun. The weight of the rifle with a loaded magazine is 3.42 kg. The weight of the rifle without the magazine is 3.13 kg. The length of the rifle is 905 mm. An empty magazine weighs 0.13 kg and 0.29 kg when loaded with 10 rounds.

The barrel is pressed in to the receiver. In order to increase service life and corrosion resistance, the bore and the cartridge chamber are chrome-plated. The bolt and locking piece are chrome-plated as well.

Each Rifle is supplied with accessories.

2. Characteristics of the Sa vz. 58 Sporter rifle

The Sa vz. 58 Sporter rifle is a semi-automatic rifle which is actuated by the pressure of gases on the piston, the gases being produced in the barrel through combustion of the powder charge. A portion of gases entering through the gas vent into the piston space causes the bolt to move automatically to its back position at the moment of shooting. The bolt is returned to its front position by the pressure of the recoil spring.

The rifle is of simple construction and easy to handle. When correctly maintained and used, its firing function is reliable and safe even under severe conditions, i.e. in dust, rain or at low and high temperatures.

The trigger mechanism enables it to only fire semi-automatically. The rear sight is of a folding leaf type. During firing, the cartridges are continuously fed from a single stack plastic magazine of an arch-like shape, which holds 10 cartridges. When disassembling the rifle for cleaning and storage purposes, no tools are necessary.

The weight and dimensions of the rifle allow it to be used very comfortably not only at shooting ranges, but also when hunting in woods, mountains, and all other kinds of terrain.

3. Marking and numbering of the rifle

Each rifle is marked with the serial number, name of the rifle, caliber, country of origin and code mark of the U.S. importer.

CHAPTER 2 - DESCRIPTION OF THE MAIN PARTS OF THE RIFLE

The Sa vz. 58 Sporter rifle has the following main parts

Fig. 2 The Sa vz. 58 Sporter rifle has the following main parts
1 - barrel, 2 - receiver, 3 - bolt, 4 - trigger mechanism, 5S - stock, 6S - magazine

1. Barrel

The barrel 1 is intended to direct the projectile. The barrel is provided with a bore with four grooves which produces the four fields of the rifling. The barrel bore twist produces a right hand helix with a constant lead (the twist of the rifling) of 240 mm, which imparts a rotary motion to the projectile. The projectile rotation ensures that the projectile in the course of its flight through the air does not change its position with regard to its longitudinal axis (trajectory) and is thus stabilized. The muzzle is provided with an inner rounding of the twist with the aim of excluding any damage to the twist. The diameter of the bore measured between two opposite fields is known as the caliber. The caliber of the Sa vz. 58 Sporter rifle is 7.62 mm. In order to improve service life (to reduce wear) and corrosion resistance, the bore is chrome-plated. The barrel is pressed in to the receiver and locked with a pin.

In the rear part of the bore, the twist passes into a smooth cartridge chamber whose shape and dimensions correspond to the cartridge in cal. 7.62 mm. The cartridge chamber passes into the rifling (the rifled part of the bore) via the transition cone which enables the projectile to gradually cut into the grooves. The cartridge chamber is chrome-plated as well.

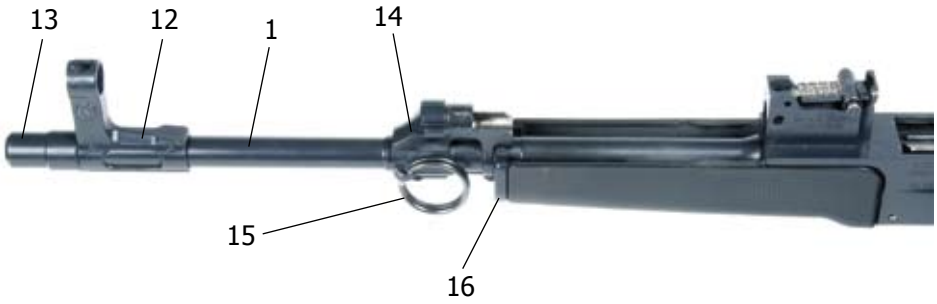


Fig. 3 Barrel assembly
/general view/

1 - barrel, 12 - front sight base, 13 - barrel extension, 14 - gas adapter, 15 - front swivel, 16 - lower handguard hoop

The external cylindrical surface of the barrel is stepped four times. Near the muzzle, on the barrel, is the pressed front sight base 12 which is locked by two pins 121 and 122 in order to prevent turning (Fig. 4). In front of the front sight base is the barrel extension 13 attached permanently to the muzzle. Barrel extension 13 is welded to the front sight base 12 bottom plate.

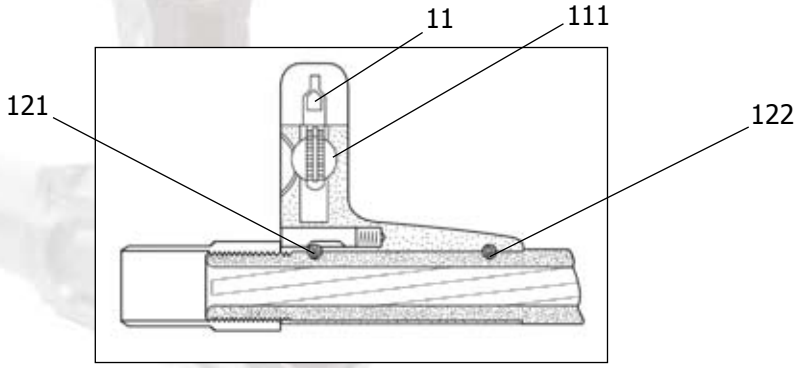


Fig. 4 Front sight base /sectional view/
11 - front sight, 111 - front sight pin, 121 and 122 - front sight base pins

Barrel extension 13 (Fig. 5) is of a cylindrical shape and is strengthened in its rear part. Inside the strengthened rear part is the thread used for screwing the barrel extension onto the muzzle.

Fig 5. Barrel extension /side view/
13 - barrel extension

Approximately at the half way point of the barrel length is an inserted **gas adapter** 14 (Fig. 6) which is locked by means of the pin. In the upper part of the gas adapter is a cavity that forms the gas cylinder. A portion of the powder gases is conveyed from the barrel through the gas adapter to the gas cylinder. The powder gases flow to the gas cylinder through the gas channel which connects the bore with the gas cylinder space. At the half way point of the length of the lower part of the gas cylinder wall, two openings pointing obliquely downward along both sides of the barrel are drilled. The powder gases escape from the gas cylinder through those openings after a round has been fired; the piston, moving backwards, has passed more than half the gas cylinder length. On the left-hand side of the gas adapter is the eye (thimble) for the front swivel 15 (Fig. 3). Both sides of the gas cylinder front part are provided with lugs with grooves into which the upper handguard jacket tips are to shift. The rear part of the gas adapter forms a catch by which the lower barrel guard front hoop is held. Half of the gas cylinder upper wall is cut off for shifting in and out of the piston.

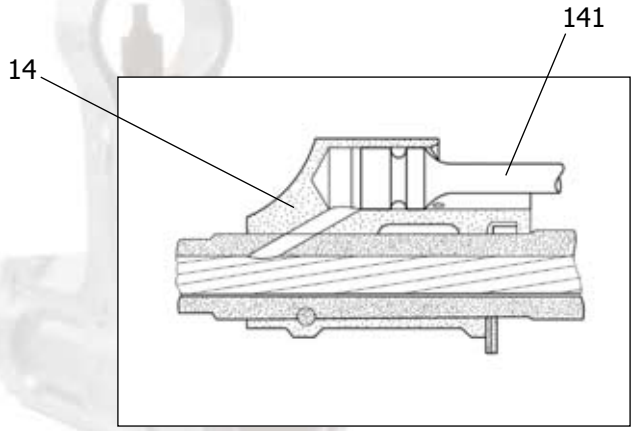


Fig. 6 Gas adapter /sectional view/
14 - gas adapter, 141 - piston

Piston 141 (Fig. 7) transmits the kinetic energy of a portion of the powder gases produced by the combustion of the powder charge in the barrel to the bolt carrier. The front part of the piston has a cylindrical head with a circumferential groove for better packing of gases in the gas cylinder and for deposition of burnt powder remainders. The rear part of the piston is thickened and forms a guide for piston spring 142 with its one end leaning against the face of the rear-sight base recess and with its other end against the collar of the cylindrical reinforcement which, together with the stop in the rear-sight base recess, limits the piston forward motion. The transition of the cylindrical reinforcement into the guide part of the piston is of a conical shape; this conical surface limits piston motion by bearing against the corresponding surface of the rear sight base. The piston spring causes the piston to return from the rear position once again to the starting position (i.e. to the front position).

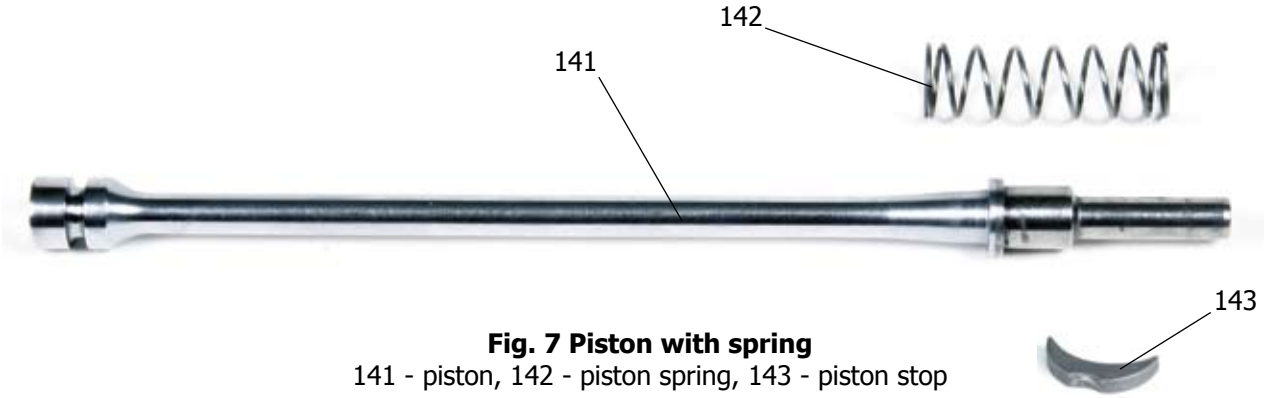


Fig. 7 Piston with spring
141 - piston, 142 - piston spring, 143 - piston stop

Front sight 11 (Fig. 4) together with rear sight 21 form the sights of the rifle and are used for aiming the rifle. The front sight is of a cylindrical shape, provided with a thread in its bottom part, longitudinally cut and opened. It is screwed into the front sight pin 111 and the front sight thread part enables it to be adjusted for height. After screwing the front sight into the front-sight pin, the opened part springs, thus preventing the front sight from turning spontaneously.

Front sight pin 111 is placed crosswise in the upper part of the front sight holder and is intended for screwing in the front sight and for its side adjustment when zeroing in.

The front sight holder is shaped in its upper part in order to form a column and ends with front-sight cover wings ensuring that the front sight is protected against damage. In the face wall of the front-sight base is a half-round recess which uncovers the middle part of the front-sight pin. On the front-sight pin and on the recess wall are two sighting gauge marks that, if opposite each other, indicate the correct side position of the front sight. The correct position for the height of the front sight is locked by a drop of lacquer on the front edge of the front sight and the front-sight base.

2. The receiver assembly

The receiver (Fig. 8) is one of the main parts of the rifle; it joins the other rifle parts together as a whole and guides the bolt.

It consists of the following main parts: receiver proper 2, rear sight 21, ejector 22, bolt catch 23, magazine catch 24, receiver cover pin safety pin 25, receiver cover pin 26 and lower handguard pin 27.

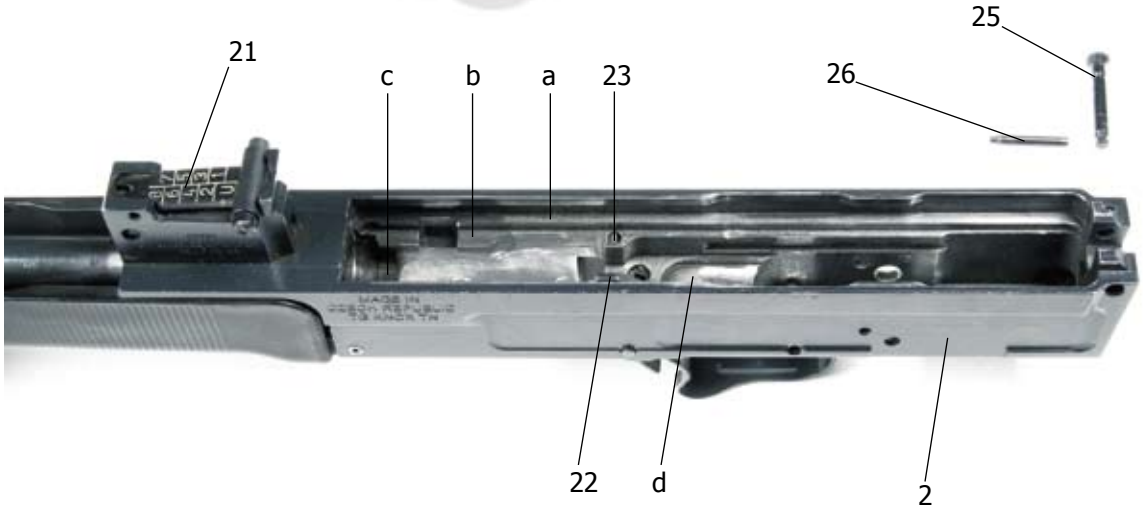


Fig. 8 The receiver assembly /top view/
2 - receiver, 21 - rear sight, 22 - ejector, 23 - bolt catch, 25 - receiver cover pin, 26 - receiver cover pin safety pin, a - guiding grooves, b - locking lugs, c - ramp, d - bridge

On both sides in the rectangular recess of the receiver are guiding grooves (a,b) along which the bolt carrier and the bolt move. In the front thickened part of the bars b are recesses in which the locking lugs of the locking piece snap when locking the bolt. The front wall between the guide bars is chamfered, thus forming the ramp (c) which enables the cartridge to be easily pushed into the cartridge chamber. The barrel is inserted into the front part of the receiver. In the middle of the receiver is bridge (d) which divides the entire inner space of the receiver into two parts: the front magazine well and the rear recess for seating the trigger mechanism. In the front magazine wall is a lug which engages in the corresponding recess in the upper part of the front edge of the receiver magazine well.

Rear sight (Fig. 9) enables the needed angles of the tangent elevation to be set; the rear sight is fixed in the rear sight base. Rear sight 21 (Fig. 10) is assembled together with rear sight slide 211, rear sight plunger 212 with spring 213 and rear sight feather 214.

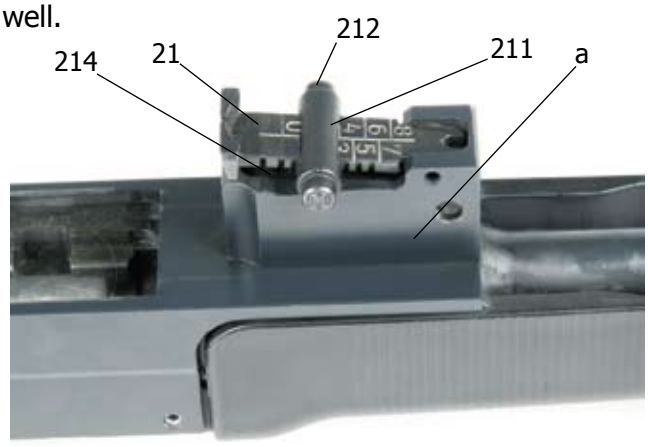


Fig. 9 Rear sight assembly
21 - rear sight, 211 - slide, 212 - rear sight plunger, 214 - rear sight feather, a - rear sight base

The rear sight base forms one piece with the receiver. The sides of the front elevated part are provided with openings for the rear sight pins. The side walls of the rear sight base form ramps. Between the side walls is a recess for shifting in the rear sight feather. In the rear part of the recess is a dimple for fixing the rear sight feather.

Rear sight 21 is intended for setting the slide in order to correspond to an appropriate range; it is of a plate-like shape. There are pins (a), on its front narrowed part, by which the leaf is swingingly mounted in the openings of the rear sight base. The rear sight leaf is inserted into the base by means of the rear sight feather. At the rear end of the leaf is the rectangular V notch (b). On the top end of the leaf are gauge lines with figures from 1 to 8 (the odd figures are on the right and the even figures on the left) which indicate the range of fire in hundreds of meters. The rear sight can consequently be set at a distance from 100 meters to 800 meters. Additionally, the left-hand side of the rear sight leaf is provided with a gauge line marked U, 'universal', which indicates a range of fire up to 300 meters. The U setting can be engaged by shifting the slide 211 to the rear position until it stops. On the right-hand side of the leaf are 9 notches pointing obliquely downwards. The rear sight plunger 212 lug engages these notches, by which the slide is locked in the set position. The dimple in the front narrowed part of the rear sight leaf is designed for the pointed end of the front sight spanner which is used for disassembling the rear sight.

Slide 211 of the rear sight is slipped over the rear sight leaf. In the middle part of the slide is a rectangular window through which the slide can be slipped over the rear sight leaf. The inside cylindrical cavity in the slide is intended for bearing plunger 212 with spring 213. The bottom side of the slide leans on and moves along the sight ramps. The right-hand side surface of the stepped part of the slide is annularly knurled and is intended to serve as a rest for the finger when depressing the plunger for setting the range of fire. The slide is held in the desired position by the plunger.

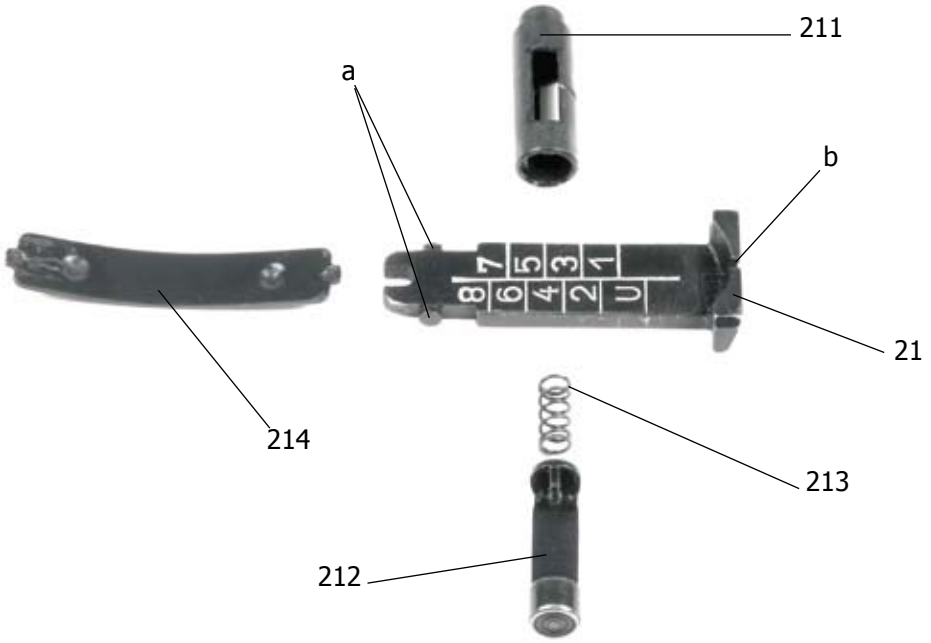


Fig. 10 Rear sight /exploded view/
21 - rear sight, 211 - slide, 212 - rear sight plunger, 213 - rear sight plunger spring, 214 - rear sight feather, a - sight pins, b - sight notch

Rear sight plunger 212 locks the slide in the set position by snapping the chamfered lug of the plunger in the appropriate notch on the right-hand edge of the rear sight leaf. The plunger lug is held in the notch on the rear sight leaf by the pressure of the plunger spring. The spring is seated in the cavity of the slide; with its one end leaning on the slide and with the other end against the lateral side of the plunger. The plunger is provided with a deep recess whose surface locks the plunger in a steady position on the rear sight leaf; this flat recess guides the plunger along the bottom side of the leaf. The plunger may be displaced after pressing the knurled lateral surface.

Rear sight feather 214 with its front end presses the bottom side of the rear sight in front of the leaf pins so that the slide is constantly forced down to the rear sight ramps. The rear sight feather is shifted with its rear end into the groove in the rear sight base thereby preventing vertical motion of the rear end of the feather. When the feather is shifted in, the stamped dimple at the end of the feather engages the dimple in the rear sight base, which prevents forward displacement of the feather when the leaf is being put on.

Ejector 22 is placed in the grooves in the upper part of the bridge. The ejector is locked against shifting out by means of the dimple. The face surface of the ejector is chamfered so as to ensure that the contact of the ejector with the base of the cartridge case is almost one-point and on the left of the vertical axis of the firing pin when the cartridge is ejected. This guarantees that the direction of the ejection of the cartridge case ejected from the rifle is correct, i.e. upwards and to the right.

On the right-hand side from the ejector, the **bolt catch** 23 is situated. After firing the last cartridge from the magazine, the bolt catch retains the bolt in the rear (open) position. The bottom part of the bolt catch is divided by a recess into two branches; the shorter one is controlled by the magazine follower lug and the longer one (with the cross knurling) is intended for manual shifting out of the bolt catch, thus holding the bolt in the opened position if this is necessary for inspection, cleaning, repairs or other reasons. When the bolt is moving forward, it makes contact with the cylindrical part of the bolt catch. Once the pressure from the bolt catch is removed (when the magazine is taken out of the receiver) and the bolt moved slightly backwards, bolt catch spring 231 pushes the bolt catch back into the receiver thus disengaging it from the bolt.

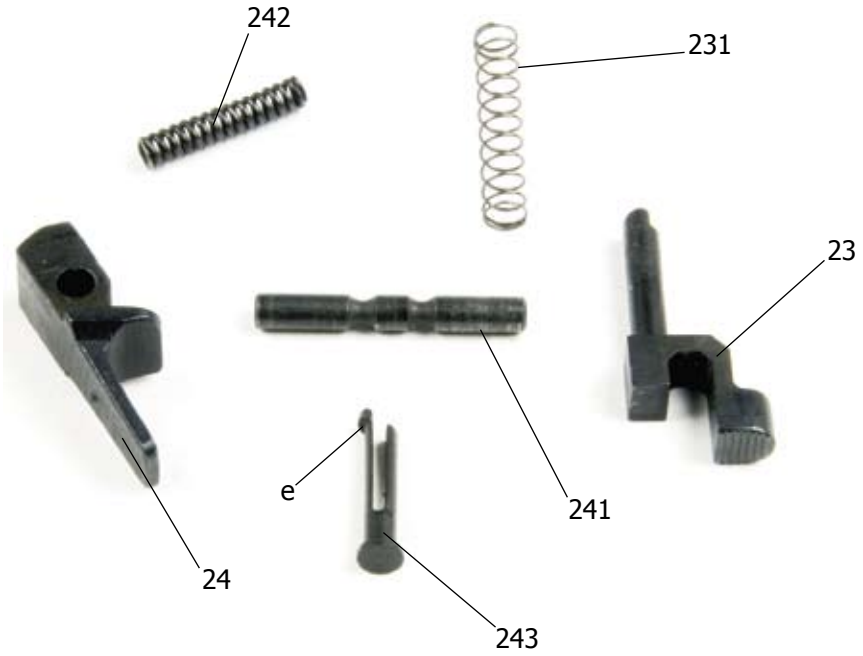


Fig. 11 Receiver components
23 - bolt catch, 231 - bolt catch spring, 24 - magazine catch, 241 - magazine catch pin, 242 - magazine catch spring, 243 - magazine catch pin safety pin, e - lug

From below on the left-hand side of the ejector, on pin 241 is the swingingly seated magazine catch 24 which keeps the magazine inserted in the receiver, thus preventing it from falling out. The magazine catch is provided with a lug which, through actuation of spring 242, snaps in behind the lug on the rear edge near the magazine feed lips. With its one end the spring is seated in the pocket of the receiver bridge while the other end bears on the cylindrical recess of the magazine catch.

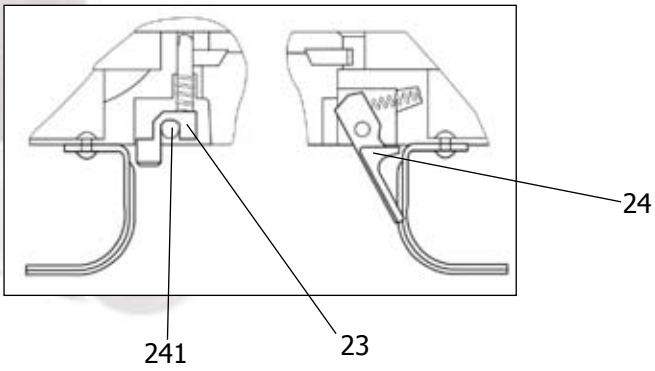


Fig. 12 Bolt catch and magazine catch /sectional view/
23 - bolt catch, 241 - magazine catch pin, 24 - magazine catch

Pin 241 is common for both the magazine catch and the bolt catch. It is locked against loosening by safety pin 243 which is longitudinally cut up and opened. At the longer end of the cut-up part is external lug (e) which snaps in behind the edge of the recess in the upper wall of the receiver bridge. The safety pin with its cylindrical part fits into the circumferential groove on pin 241.

In the bottom of the receiver are two rectangular openings. The trigger passes in to the first one while the other is designed for seating the shaped nut of the grip screw. **Trigger guard 28** is riveted to the bottom of the receiver. The rear wall of the receiver is provided with a thread for fixing the stock to the receiver's rear face and additionally with a groove for fixing the return mechanism. The position of the stepped return mechanism is locked by receiver cover pin 25 (Fig. 8) which is kept in position by the force of receiver cover pin safety pin 26 which presses against the two circumferential grooves of the receiver cover pin. Receiver cover pin safety pin 26 is mounted vertically in the wall of the receiver rear right-hand corner and is pushed by the rear arm of the trigger mechanism feather.

3. Bolt assembly

The bolt makes possible the action of the rifle; pushing the cartridges from the magazine and inserting them into the cartridge chamber; locking the cartridge chamber at the moment of firing, igniting the cartridge primer, pulling out and ejecting the fired cartridge case.

The bolt assembly has the following parts: the bolt carrier, bolt , locking piece, and striker.

Bolt carrier 35 (Fig. 13) actuates the bolt, the locking piece and the disconnector. The front wall of the bolt carrier is provided with a recess against which the bottom part of the piston strikes at the moment of firing. On the right-hand side of the bolt carrier is cocking lever a which is designed for hand-operated cocking of the bolt. Both sides of the bolt carrier are provided with guide grooves (b) which are interrupted at about the half way point by a recess whose shape corresponds to the corresponding lugs in the receiver. This recess is intended for inserting the bolt carrier in the receiver and for taking it out again. The rear wall of the bolt carrier is provided with three longitudinal openings. The top opening is made in order to house the return spring while the other two openings are designed to lower the weight of the bolt carrier.

The bottom part of the bolt carrier has a recess which is divided into two parts by partition wall (c). The partition wall together with unlocking tip (d) control the motion of the locking piece. The unlocking tip formed in the front part pulls the locking piece from the locked position. The unlocking-tip bottom surface forms a guide for the bolt. Bolt carrier shaft (e) provided with an opening for the striker is situated in the bottom rear part of the bolt carrier. When disassembling and assembling the bolt, the striker is locked against falling-out by a lug which projects from the left-hand side into the opening for the striker. Bolt carrier side plate (f) actuates the disconnector.

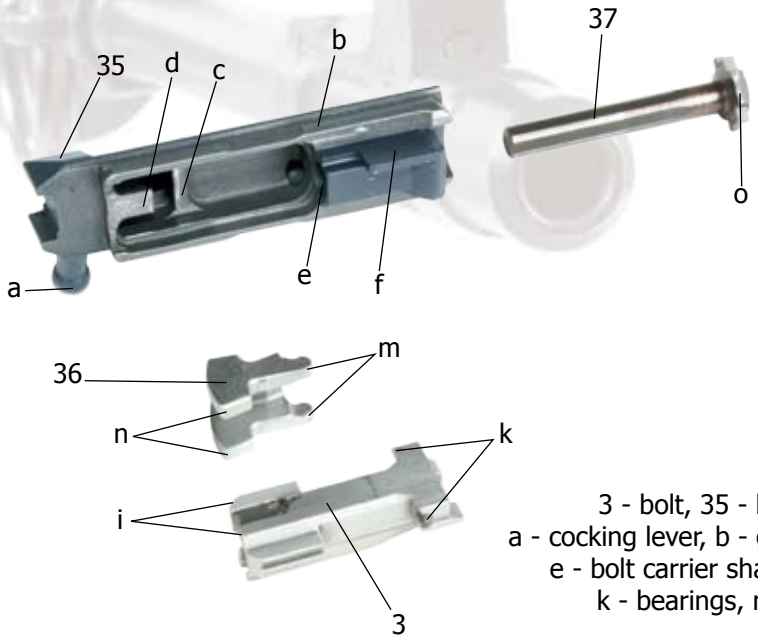


Fig. 13 Bolt assembly
3 - bolt, 35 - bolt carrier, 36 - locking piece, 37 - striker,
a - cocking lever, b - guide grooves, c - partition wall, d - unlocking tip,
e - bolt carrier shaft, f - bolt carrier side plate, i - ramming lugs,
k - bearings, m - joints, n - locking lugs, o - striker nose

Locking piece 36 (Fig. 13) ensures the proper locking of the cartridge chamber. It is of horse-shoe shape; both arms of the locking piece pass at the ends into joints (m) by which the locking piece is swingingly carried in the bolt bearings. In the front bottom part of the locking piece are situated locking lugs (n) which, when the locking piece is in a locked position, transmit the pressure produced at the moment of firing to the receiver.

Striker 37 (Fig. 13) strikes against the firing pin. It is of a hollow cylinder shape closed at its front end by a smooth front wall coming into contact with the firing pin. The rear open end has a head provided with grooves by which the striker is guided along the bars in the receiver. The striker head is elongated downwards, thus forming a nose (o). The cylindrical part of the striker is reliefed along the periphery by means of six longitudinal grooves. The groove on the left-hand side of the striker is closed on its front side and is elongated backwards as far as the striker head. The groove is guide for the projection of the bolt carrier. The projection prevents the striker from falling out of the bolt carrier. This closed groove is joined with the neighboring longitudinal groove by means of a cross groove which enables the projection of the bolt carrier to pass to the closed groove. Striker spring 382 (Fig. 17) is inserted with its one end into the cylindrical cavity of the striker.

Bolt 3 (Fig. 14) is provided in its front wall with a bed with a centric opening for the cartridge base. Moving free in this opening is firing pin 31 (Fig. 14). Extractor 32 with its claw reaches the edge of the cartridge case bed. The bottom edge of the cartridge base bed is bound by ramming lugs (i) (Fig. 13) which push the cartridges out from the magazine into the cartridge chamber. The ejector passes through the groove between these ramming lugs when the bolt is moving backwards. The recess on the right-hand face wall forms a stop for the bolt catch. The bolt is guided in the carrier by grooves (j) which are interrupted on both sides of the bolt by the recess intended for the locking piece which is carried swingingly in semicircular bearings (k) (Fig. 15). The bolt is provided with an opening for the striker at the back.

Fig. 14 Bolt /disassembled/
3 - bolt, 31 - firing pin, 32 - extractor, 33 - extractor spring,
34 - extractor stay, j - grooves

Firing pin 31 (Fig. 14) ignites the cartridge primer. It is mounted in the body of the bolt. The firing pin is prevented from falling out by the extractor bottom part which reaches the groove in the firing pin and thus also limits the return motion of the firing pin. The firing pin forward motion is limited by the conical surface of the firing pin which bears against the corresponding surface in the bolt body. The thickened rear end of the firing pin projects into the cavity designed for the striker and is reliefed by three external longitudinal grooves.

Extractor 32 (Fig. 14) extracts the fired cartridge case from the cartridge chamber by means of a claw which, pressed by extractor spring 33, snaps into the groove of the base of the cartridge case. The extractor spring is seated in the cavity of the bolt and presses against stay 34 which in turn actuates the extractor.

The return mechanism (Figs. 15) makes the bolt return to the extreme front position. It consists of return mechanism base 38 with receiver cover 381, striker spring 382, striker spring guide 383, return spring 384, return spring guide 385 and return spring locking block 386.

Return mechanism base 38 unites all the parts of the return mechanism in order to form one unit. The base is riveted with receiver cover 381. The base is formed by a plate to which return spring guide 385 and striker spring guide 383 are fixed. In the rear wall of the base is a projection by means of which the return mechanism base is positioned in the recess in the rear part of the receiver. In order to prevent the receiver from falling out, the base is locked by receiver cover pin 25 (Fig.8).

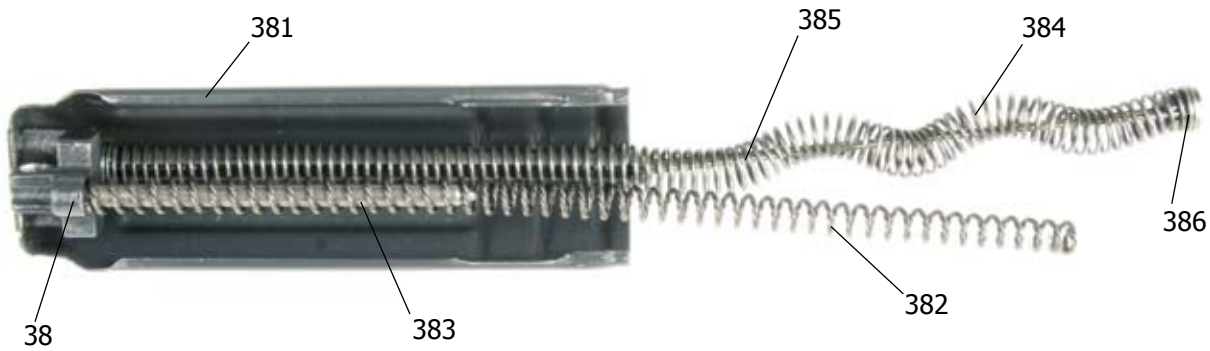


Fig. 15 The return mechanism
38 - return mechanism base, 381 - receiver cover, 382 - striker spring, 383 - striker spring guide, 384 - return spring,
385 - return spring guide, 386 - return spring locking block

Receiver cover 381 is a stamp riveted with the base. It covers the rear part of the rifle's receiver.

Striker spring 382 throws the striker against the firing pin. It is placed on striker spring guide 383 which is pivoted on the return mechanism base and allows a mild double-sided wobbling. The striker spring guide is provided near the base with a groove in which the turn of the striker spring sits. Both end turns of the striker spring have their diameters reduced so that the striker spring, regardless of which of its ends has slipped over the guide, cannot be shifted out spontaneously.

Striker spring guide 383 is a steel rod which supports striker spring 382.

Return spring 384 makes the bolt return to the front position. It is placed over return spring guide 385. The guide is made of steel wire and its bent ends engage the notch on the return spring locking block 386.

Return spring guide 385 consists of a stick and a wire. The stick is fixed in the return mechanism plate by means of a cross pin which allows a mild double-sided wobbling of the stick.

4. The trigger mechanism

The trigger mechanism makes firing possible and is provided with a device locking the rifle against spontaneous fire. It is situated in the rear recess of the receiver on two pins.

The trigger mechanism (Figs. 16 and 17) has the following parts: trigger 4, trigger pin 41, disconnector 42, disconnector spring 43, disconnector pin 44, sear 45, sear pin 46, trigger mechanism feather 47, safety catch 48 and safety catch holder 49.

Trigger 4 is pivoted in the receiver on pin 41 and controls the release of the striker through the sear. The rear part of the trigger fingerpiece projects to form projection (a) which when leant against the receiver, restricts backward motion of the trigger. In the top part of the trigger is a cut-out in which disconnector 42 is seated on disconnector pin 44 (Fig. 18). In the rear part of the trigger is an oblique bed for disconnector spring 43.

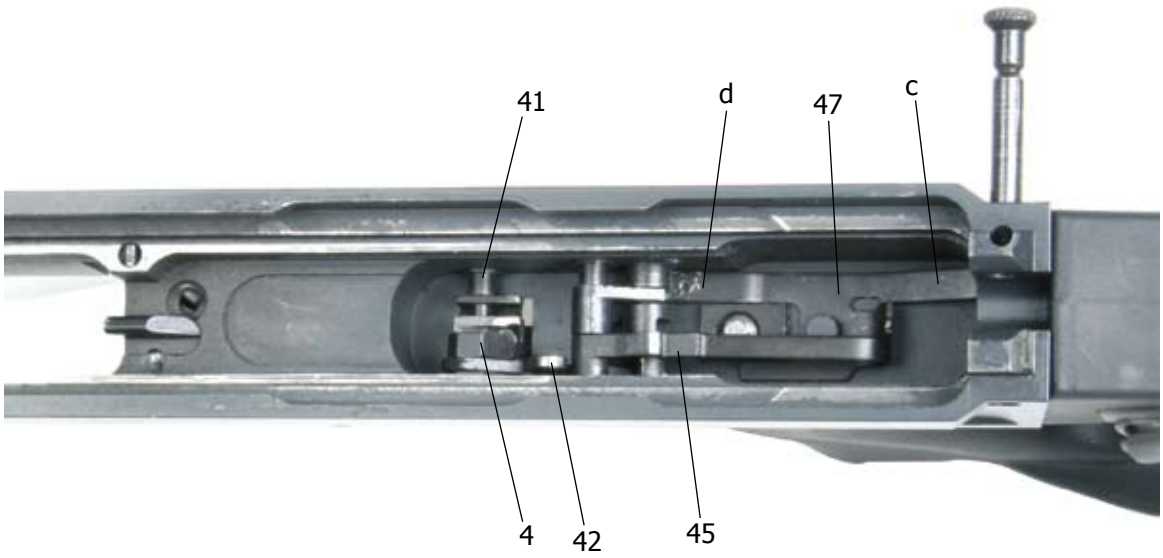


Fig. 16 Trigger mechanism /in receiver/
4 - trigger, 41 - trigger pin, 42 - disconnector, 45 - sear, 47 - trigger mechanism feather, c,d - trigger mechanism feather arms.

By means of the lug, **disconnector** 42 lowers **sear** 45, by pulling its projection (b) (when the trigger is squeezed, if the safety catch is set in the "fire" position). The lug projects on the right-hand side of the free end of the disconnector. The disconnector is pivoted on pin 44 in the cut-out of the trigger. On the top of the disconnector is a projection which is controlled by the left-hand side bolt carrier side plate during its backward motion. In the bottom part it is provided with a recess against which disconnector spring 43 leans with its one end. The other end of the disconnector spring is seated in the trigger bed. The disconnector spring pushes the disconnector so as to make it come into contact with the safety catch.

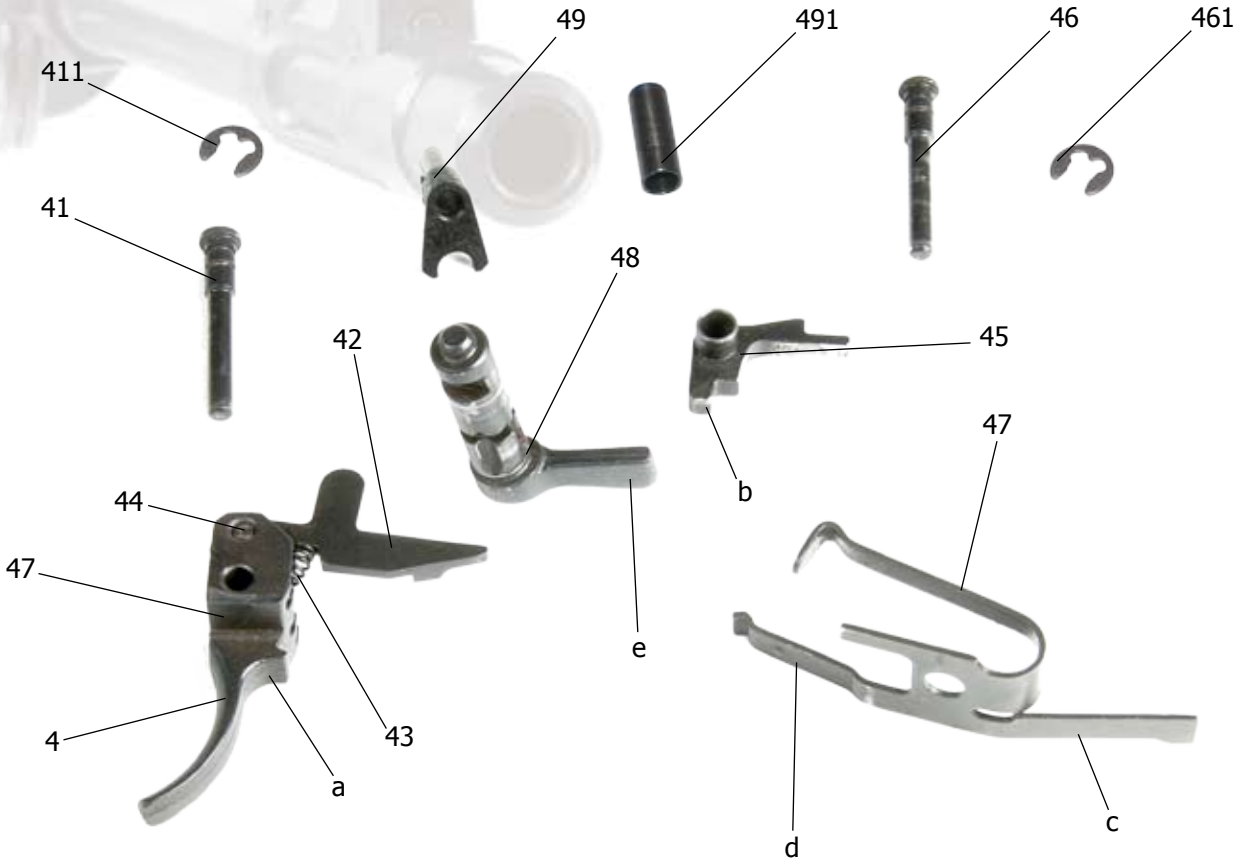


Fig. 17 The trigger mechanism /disassembled/
4 - trigger, 41 - trigger pin, 411 - trigger pin e-clip, 42 - disconnector, 43 - diconnector spring,
44 - disconnector pin,45 - sear, 46 - sear pin, 461 - sear pin e-clip, 47 - trigger mechanism feather,
48 - safety catch, 49 - safety catch holder, 491 - safety catch holder spacer,
a - trigger projection, b - sear projection, c,d - trigger mechanism feather arms, e - safety catch wing

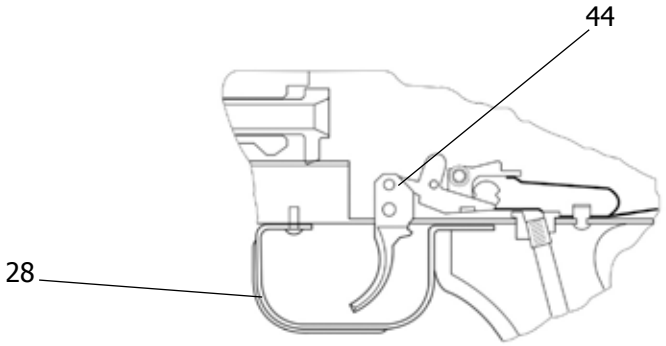


Fig. 18 The trigger mechanism /sectional view/
28 - trigger guard, 44 - disconnector pin

The sear is pushed into engagement with the nose of the striker by the **trigger mechanism feather** 47 arm. The feather is mounted on the bottom of the recess of the receiver. It is locked by the rivet of the trigger guard rear end on which the trigger mechanism feather is placed with its circular opening in order to prevent longitudinal displacement. It is side guided by the screw nut of the grip. Arm (c) of the feather presses receiver cover pin safety pin 26 while the bent end of arm (d) snaps in the recess of the safety catch, thus locking its position. The dimple on arm (d) is intended for supporting the pointed end of the needle from accessories when taking out or inserting the safety catch.

Safety catch 48 enables firing and prevents unintended firing. It is a cylinder provided with wing (e) at one of its ends. The cylindrical part of the safety catch is provided on its left hand side with a cutting placed opposite the disconnector. Thus, when the wing of the safety catch is in the "Fire" position, i.e. pointing forward, the disconnector slides into the cutting, raises up and engages the sear. **When the wing is in the vertical position – locked** – the cutting is 90 degree to the disconnector, which is thus pushed down by the cylindrical part of the safety catch and out of reach of the sear. **Safety catch holder** 49, which is placed on the sear pin, prevents the safety catch from falling out. The cylindrical part of the safety catch is provided with longitudinal grooves in which the bent end of the trigger mechanism feather arm snaps, when the safety catch changes its adjustment.

5. Stock assembly and handguards

The Sa vz. 58 Sporter rifle has a stock assembly (Fig. 19) whose main parts are polymer stock 5S, upper handguard 55S and lower handguard 56S. Polymer **stock** 5S elongates the rifle and enables the rifle to be correctly rested against the shoulder when firing. Through the opening in its front part passes double threaded stock **screw** 52S by means of which the stock is fixed to the receiver. **Rear swivel** 51S is situated on the left-hand side of the stock and is pivoted on holder 511 of the rear swivel. The rear swivel holder is placed on **rear swivel** base 512 which is mounted in the bed of the stock. The rear swivel is prevented from falling out by stock screw 52S.

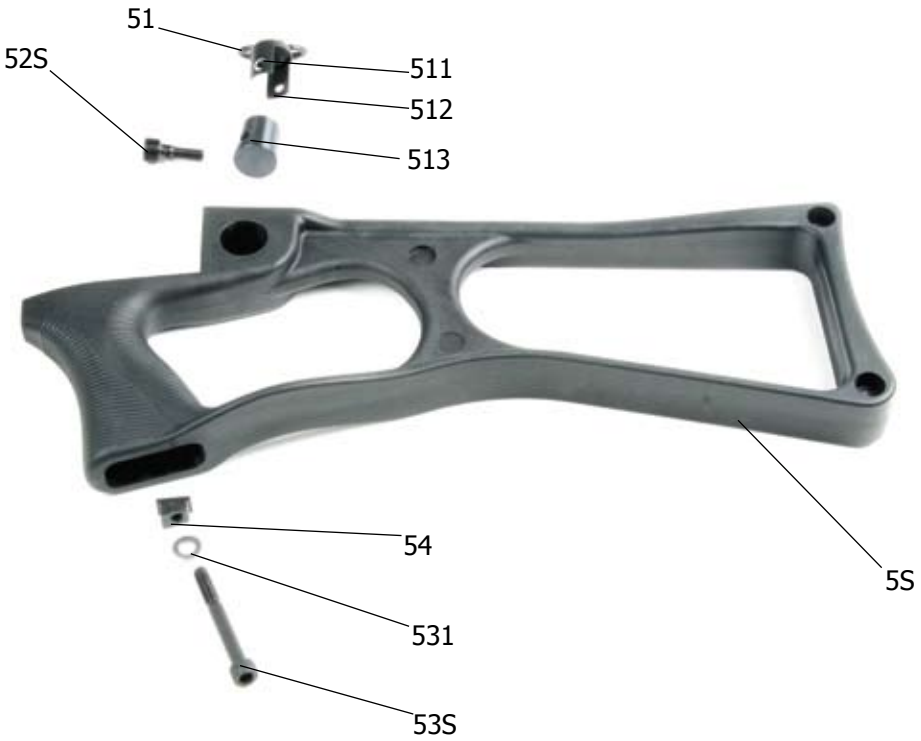


Fig. 19 Stock /disassembled/
5S - stock, 51S - rear swivel, 511 - rear swivel holder, 512 - rear swivel base, 513 - rear swivel insert, 52S - stock screw, 53S - stock grip screw, 531 - stock grip screw washer, 54 - stock grip nut

The grip part of the stock is fixed to the receiver by stock grip screw 53S and by stock grip nut 54 which is seated in the recess of the receiver bottom. The grip screw head is countersunk in the grip and bears against washer 531.

The handguards make it possible to hold the rifle with the left hand; they are made of polymer and cover a portion of the barrel and protect the rifleman's hand against heat when firing.

The front handguards consists of the upper and lower handguard.

The upper handguard assembly (Fig. 20) covers the barrel from the top. It consists of polymer upper handguard 55S, metal jacket 551, upper handguard pin 552, upper handguard pin pawl 553, upper hand-guard pin pawl spring 554, upper hand guard holder 555.

Front part of handguard metal jacket 551 is projected to form tips a by means of which the hand guard snaps into the grooves of the gas adapter. Upper handguard holder 555 is situated in the middle of the jacket and is the metal piece by means of which handguard guard 55S is locked against turning. Projection (b) in the front part of the handguard forms a guide for the piston instead of the cut-off upper part of the gas cylinder. Rear part of the handguard jacket is provided with two projections (c) through which upper handguard pin 552 passes. The pocket for pin pawl spring 554 and pin pawl 553 is situated in the right-hand projection, which when pressed by the spring, snaps into the circumferential grooves on the hand-guard pin. In this fashion the handguard pin is locked against falling out from the right-hand projection when removing the handguard off the weapon.

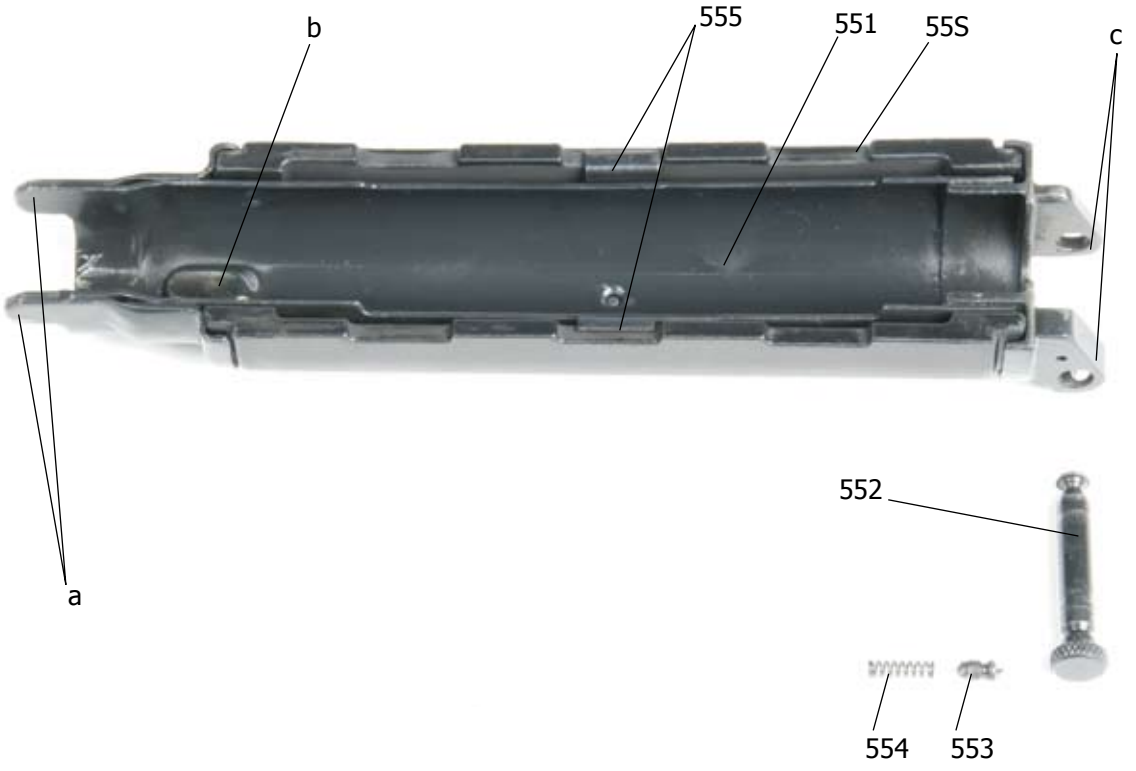


Fig. 20 Upper handguard

55S - upper handguard, 551 - upper handguard metal jacket, 552 - upper handguard pin, 553 - upper handguard pin pawl, 554 - upper handguard pin pawl spring, 555 - upper handguard holder, a - tips, b - projection, c - projections

Lower handguard 56S (Fig. 21) is made of polymer and covers the barrel from below. The front end of the lower handguard is shifted in lower handguard front hoop 16 which is slipped over the barrel and snapped in by the gas adapter lug. The rear end of the lower barrel guard is fixed to the receiver by pin 561. Both ends of the pin are riveted over. The lower handguard is provided with grooves along both sides for a firmer grip while firing.

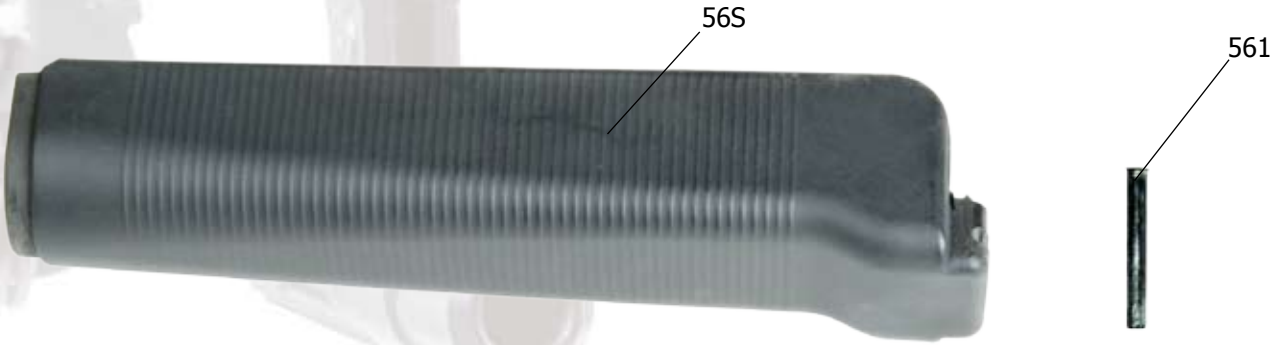


Fig. 21 Lower handguard
(56S - lower handguard, 561 - lower handguard pin)

CHAPTER 2 - ACCESSORIES and THEIR DESCRIPTION

1. Accessories

Each Rifle is provided with the following accessories:

- two magazines 6S
- magazine pouch 7
- sling 8
- cleaning kit bag 9
- cleaning rod (two-part) 91
- oakum cleaning rod 92
- horsehair brush 93
- oil can 94
- needle 95
- cheek piece 96
- recoil pad 97
- promotional CD 98

Fig. 22 Accessories
6S - magazine, 7 - magazine pouch, 8 - sling, 9 - cleaning kit bag, 91 - cleaning rod, 92 - oakum cleaning rod, 93 - horsehair brush, 94 - oil can, 95 - needle, 96 - cheek piece, 97 - recoil pad, 98 - promotional CD

2. Accessories description

1. Magazine 6S (Fig. 23) is intended for continuous loading of the rifle with cartridges during firing. It is of an arched shape and takes 10 cartridges. It consists of magazine body 6S, magazine follower 61S with magazine spring 62S, magazine safety 63S and magazine floor plate 64S.

Magazine body 6S is made of semi-transparent plastic and forms a box for ten cartridges and the magazine follower with a spring. The case opens at both ends.
The sidewalls are provided with rails intended for guiding both the cartridges and the magazine follower. The magazine head is provided with projections (a and b) on the front and rear edges in order to hold the magazine into the receiver. The magazine's head is provided with a rim (c) which restricts the depth of its insertion into the receiver. The lower edges of the sidewalls of the magazine case are provided with grooves (d) into which magazine floor plate 64S is fitted.

Magazine follower 61S pushes the cartridges into the magazine feed lips through the action of magazine spring 62S. The rear wall of the magazine follower is provided on its right hand side with a projection for lifting up the bolt catch after having fired the last cartridge from the magazine.

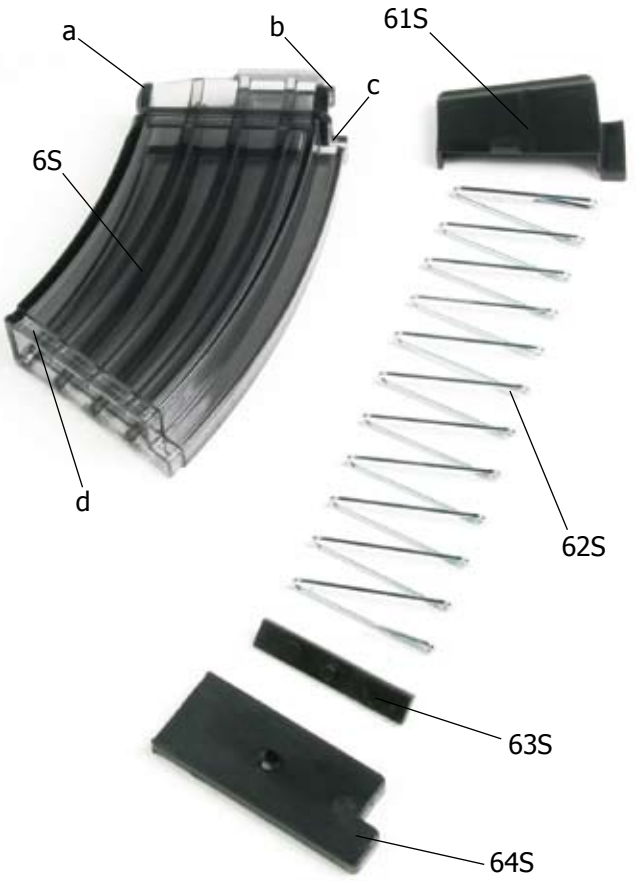


Fig. 23 Magazine /disassembled/
6S - magazine body, 61S - magazine follower,
62S - magazine spring, 63S - magazine safety,
64S - magazine floor plate,
a,b - projections, c - rim, d - grooves

Magazine spring 62S pushes the follower into the magazine feed lips. It is made of steel wire which is yellow chromate treated. With its one end it is shifted in and leans against the magazine follower 61S bottom where it is seated on a rail. The other end of the magazine follower spring leans against the magazine's safety catch on the magazine floor and is again seated on the magazine safety rail.

Magazine safety 63S locks the magazine floor plate against spontaneous shifting out. The middle part is provided with a projection which snaps into the opening of the magazine floor plate. The rail in the middle of the safety catch is intended for positioning the magazine spring.

Magazine floor plate 64S closes the magazine from below. It has a round opening in the middle for the projection of the magazine bottom safety catch.

2. Magazine pouch 8 is made of black nylon. A tab intended for suspension on the belt is on the rear wall of the pouch. The inside of the pouch is divided with partitions into two compartments in which the magazines are deposited. The whole pouch is closed with a cover fitted with a strap which attaches itself to the front part of the pouch with a dry zip.

3. Sling 8 makes it possible to carry the rifle; it is 1,220 mm long and 26 mm wide. A small buckle is sewed on to one end of the sling by which the sling may be shortened or extended. At the other end, the sling is provided with a sewed-on leather fastening strap with an opening for the connecting button. When fixing the sling to the rifle, leather fastening strap must be first pulled through the rear swivel, then through the small buckle and then the leather strap should be pulled through the front swivel on the assault rifle and the connecting button should be buttoned up.

4. Cleaning kit bag 9 is made of strong textile material and is designed to hold all the cleaning accessories as well as needle 95.

Cleaning rod 91 is intended for cleaning and lubricating the bore and the cartridge chamber. The cleaning rod consists of two parts, 1 and 2, which must be screwed together in order to form one piece before it is used. One end of the upper part of cleaning rod 1 is provided with a thread to which either oakum cleaning rod 92 or horsehair brush 93 can be attached .The lower part of cleaning rod 2 is provided at one end with an annular groove through which the needle is pushed after shifting the cleaning rod in the opening of the plug of oil can 94. In this fashion the cleaning rod can be turned along the grooves in the barrel.

Oakum cleaning rod 92 is designed for cleaning the bore and the cartridge chamber. One end of the oakum cleaning rod is provided with a thread to be screwed into the cleaning rod (when cleaning the bore) or into the oil-can plug (when cleaning the cartridge chamber or the gas cylinder). The other end is provided with a cut-out through which a piece of rag can be placed. The middle part of the oakum cleaning rod is provided with a square thread interrupted with three longitudinal grooves. The oakum is to be wound around this thread when cleaning the bore and the cartridge chamber.

NOTE: Oakum can be found at a plumbing supply store and is excellent for cleaning the bore. It is used by several armies in Europe.

Horsehair brush 93 is used for cleaning and oiling the bore, the cartridge chamber and the gas cylinder. The brush has a neck provided with a thread by means of which it is screwed into either the cleaning rod or the oil-can plug.

Oil can 94 is a round small vessel for keeping the gun oil. The oil can neck is provided with an internal thread for screwing onto the oil can plug.

The oil can **plug** has three openings. The longitudinal opening is designed for the end of the cleaning rod. The cross opening is designed for housing the oakum cleaning rod or the horsehair brush while cleaning the cartridge chamber. The last (cross) opening is for fixing needle 95. The unscrewed plug with the key then serves **as** the cleaning rod **handle**.

Needle 95 is used when disassembling and cleaning the rifle. Some needles have spannerlike openings intended for adjustment for the height of the front sight.

5. Cheek piece 96 is covered with cheek piece pad 961 and is designed to allow more comfortable shooting.

6. Recoil pad 97 is made of rubber and provides significant reduction of recoil felt by shooter.

7. Promotional CD 98 includes among the other all important information on Sa vz. 58 Sporter rifle.

CHAPTER 4 - AMMUNITION

1. Types of cartridges

Only 7.62 x 39 mm cartridges may be used in the Sa vz. 58 Sporter rifle. They should only be of excellent quality and manufactured by a company known for their quality control.

Cartridges with rusty spots on them must be wiped with a dry cloth. Cartridges which have been unpacked for a longer time must be wiped with a dry cloth before loading the magazine, and checked for length and turning of the bullets. When some cartridges are in use and frequently rammed into magazines for a longer time, loosening of the bullet in the cartridge case neck, possible pushing in of the bullet into the cartridge case or turning of the bullet may occur. In these cases, the water-tightness and oil-tightness of the cartridges are decreased. Cartridges with pushed-in or turning bullets must not be used, but disposed according to valid regulations. Never use defective cartridges for firing (those considerably rusted, with damaged cartridge cases or bullets, with a damp or oiled powder charge or with bullets pushed in the cartridge cases and the like).

Never strike the cartridge, primer or bullet with a hammer or other hard objects.

2. Loading the magazine

The magazine can be loaded by hand (Fig. 24). Before loading, the magazine must be wiped dry.

When loading the magazine, it should be taken out of the rifle and held in one hand. The cartridges must be placed by the other hand in to the magazine follower and pushed underneath the magazine feed lips and further right to the rear wall of the magazine. Each of the next rounds is placed on to the previous round, but pushed into the magazine body in the same manner as the first round.

Fig. 24 - Loading the magazine

CHAPTER 1 - FUNCTIONING OF THE PARTS AND MECHANISMS OF THE RIFLE

1. Preparing the rifle for shooting

Before firing a rifle which has had a layer of vaseline applied for a long or short-term period, it must be cleaned and the preserving agent removed. The rifle must be then disassembled and all parts all wiped dry. Afterwards, the assembled rifle should be preserved with a quality gun oil.

Directly prior to firing, wipe dry the bore and the cartridge chamber.

When disassembling, cleaning and assembling the rifle, all the components should be inspected and checked to see whether they are worn to an excessive degree, battered, broken or damaged in some other way. When assembling, the functioning of the particular mechanisms should be checked. Special attention should be paid to checking the functioning of the assembled trigger mechanism, the reliable functioning of the safety catch, to the disconnector, to the sear and the condition of the magazine.

After completely assembling the rifle, the functioning of the bolt should be checked by hand cocking. Proper feeding is checked by charging the rifle with a few practice rounds from the magazine (by hand cocking).

The rifle is made ready for firing by inserting the loaded magazine into the magazine well of the receiver and cocking the gun by moving the bolt into the extreme rear position from which it is released without holding the bolt handle any longer or by moving the bolt forward by hand. During this operation the finger must be off the trigger. The safety catch should be turned into its forward (fire) position only prior to firing.

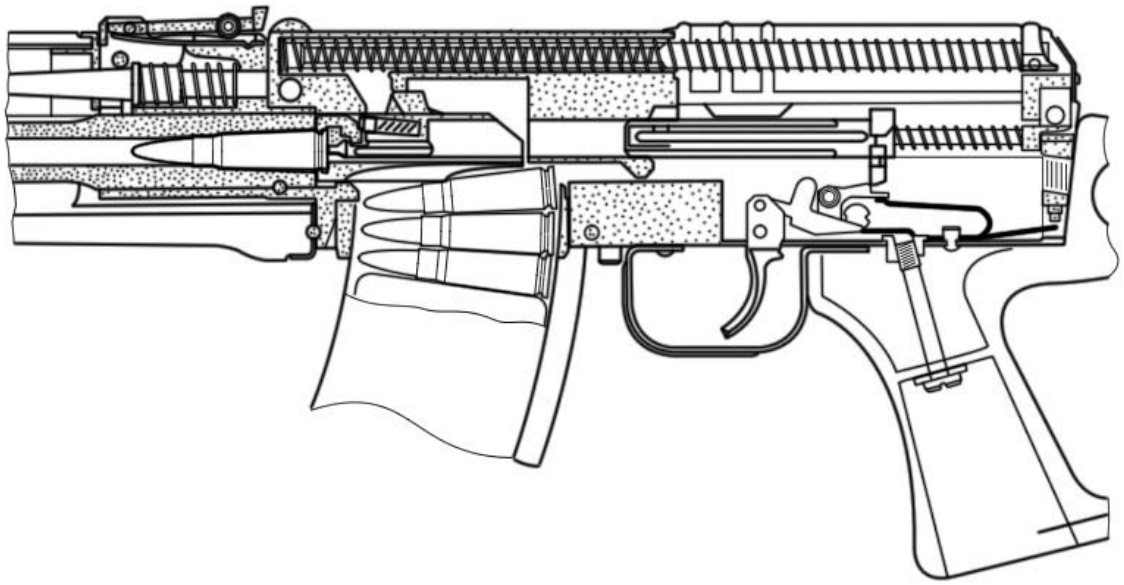


Fig. 25 Position of the parts in loaded rifle

2. Functioning of the rifle parts

Firing

One may open fire at an object after setting the rear sight to an appropriate range of fire and after adjusting the safety catch wing into the "fire" position, i.e. forward.

When turning the safety catch wing into the position for firing, the safety catch engages the disconnector, by putting it into the safety catch groove, with the sear. The disconnector, which is being constantly pushed up by its own spring, hooks the sear and controls its lowering and lifting.

By squeezing the trigger to which the disconnector is pivoted, the sear is lowered and the striker, which is under the pressure of its spring, is released. The striker thus hits against the firing pin which initiates the cartridge primer in the cartridge chamber. The combustion of the powder that follows creates gases, the pressure of which sends the bullet into the barrel. As soon as the bullet passes the gas channel of the barrel, a portion of the powder gases, penetrates into the gas cylinder, where it hits the piston head, thus setting it in a backwards motion. The piston strikes the face of the bolt carrier thus sending it to its rear position. The piston is, nevertheless, retained by bearing its conical surface against the face of the recess and returned by the piston spring to the original position. At this time, the bullet has already left the barrel and the pressure in the barrel has decreased. With its unlocking tip, the bolt carrier then pulls the locking piece from the locked position. The locking piece folds into the recess in the bolt carrier over the unlocking tip. From this moment on, all the components of the bolt move together backwards. The beginning of the motion of the bolt coincides with beginning the extracting of the fired cartridge case from the cartridge chamber. The fired cartridge case is pulled by the rim of the base by the extractor claw until the moment when the bottom rim of the cartridge case base strikes the ejector and the cartridge case is thrown out of the rifle's receiver upwards to the right.

Meantime, bolt carrier side plate runs onto the disconnector's lug and depresses the disconnector, thus disengaging it from the sear so that the sear is lifted up through the action of the arm of the trigger mechanism feather even if the trigger is squeezed.

As soon as the bolt moving backwards has run to its extreme rear position, the bolt carrier strikes against the return mechanism base, stops its motion and the whole bolt assembly then returns to its front position, being actuated by the return spring. The striker being driven by the striker spring catches the sear with its nose. The ramming lug of the bolt pushes the top round out from the magazine feed lips and rams it into the cartridge chamber. The base of the cartridge case bears against the bolt head pocket, at which the extractor claw snaps into the groove of the base of the cartridge case. During the bolt carrier's forward motion, the locking piece falls into the receiver lugs and locks its position.

In order to fire the next shot, it is necessary to release the trigger and squeeze it again.

The rifle may be locked against an unintended shot by adjusting the wing of the safety catch into the vertical position. When in this position, the safety catch disengages the disconnector from the sear, preventing it from lowering and thus releasing the striker. In this fashion the rifle is not capable of firing if the rifle's safety is in the locked position.

This mode of locking does not in any way restrict the normal functioning of the other parts of the bolt with the exception of the striker. It is consequently possible to load as well as unload the cartridge from the chamber when the weapon is locked.

Ceasing fire

Ceasing fire may be temporary or permanent.

Firing is temporarily ceased automatically after every shot, regardless of whether the trigger is released or squeezed; the next single shot may be fired only by squeezing the trigger again.

After firing the last cartridge from the magazine, the bolt remains in the rear position; after replacing the empty magazine with the full one and pulling the bolt carrier backwards by its cocking lever, the bolt catch is released (for the follower pushing the catch up is down in the magazine again) and firing may be resumed.

In case of temporary interruption of fire, the rifle will be locked against an unintended shot by turning the wing of the safety catch downwards, as the cartridge chamber has a cartridge inside it and the striker is in the rear cocked position. Firing may be reopened immediately after adjusting the safety catch wing into "Fire" position.

Termination of firing and unloading the rifle

After terminating fire, the rifle must be locked. When unloading the rifle, take out the magazine (Fig. 27) and through cocking the bolt, eject the cartridge from the cartridge chamber. Then adjust the safety catch wing in the position "Fire", pull the bolt by its cocking lever backwards and with the trigger being squeezed (releasing the striker), let the bolt go to the front position (to release the striker spring). Then re-lock the assault rifle. Take the remaining cartridges out of the magazine and slide the empty magazine into the rifle.

CHAPTER 2 - TROUBLESHOOTING

1. General rules for preventing malfunctioning

The rifle is a reliable trouble-free firearm if correctly handled, carefully operated and maintained. Nevertheless, if the rifle is exposed to long-lasting activity, troubles in firing may occur due to wear or breaks to some of the components, due to dirt in the rifle mechanisms, defective cartridges, careless handling or insufficient maintenance of the rifle. The above-mentioned circumstances affect the normal functioning of the rifle and can result in malfunctions and troubles when firing.

Most malfunctions and troubles which occur when firing the rifle may be easily solved by simple repeating – pulling the bolt carrier by the cocking lever to its rear position; if a malfunction is not eliminated by repeating or, if eliminated, it re-occurs, it is necessary to unload the rifle and find the reason behind the malfunction.

In order to prevent malfunctions in firing, it is necessary:

- to strictly follow the instructions regarding maintenance, disassembling, assembling, cleaning, inspecting and preparing the rifle and cartridges for firing;
- to protect the components and mechanisms of the rifle from dirt;
- not to use force when removing malfunctions which might cause damage to the components;
- to carefully inspect the cartridges and magazines before loading the magazines. Do not load magazines with defective or rusty cartridges, wipe the cartridges and remove possible impurities with a dry cloth before loading the magazines;
- to oil the components that work against each other during their functioning before firing; clean and dry the bore and the cartridge chamber;
- to check from time to time the condition of the rifle components and mechanisms at breaks in firing, remove thickened lubricant and impurities off the friction surfaces; re-oil the friction surfaces after cleaning them;
- to carefully protect the rifle from penetration of impurities (dust, sand, earth) into the muzzle when firing, when on the move and when taking firing positions; protect the rifle from impact

2. Typical malfunctions, their causes and solutions

Kinds of malfunctions and troubles, their causes and ways of methods of remedy are indicated in the below table:

Malfunction	Cause	Remedy
1. Misfiring No shot after squeezing the trigger	1. Damaged firing pin, if there is no dimple on cartridge primer left by firing pin impact 2. Fatigued or broken striker spring, if poor trace of firing pin on cartridge primer 3. Defective cartridge	1. Replace firing pin 2. Replace striker spring 3. After a lapse of about 10 seconds (danger of delayed ignition of powder charge), by hand recharging, eject the cartridge from the chamber. Inspect the ejected cartridge and if the primer shows adequate dimple caused by strike of firing pin, replace the cartridge
2. **Piston** is not returned to front position	Fatigued or broken piston spring	Replace piston spring

3. **Half-closed bolt** Bolt carrier does not bear against the face of the receiver	1. Dirty bolt 2. Defective (deformed) cartridge 3. Dirty cartridge chamber	1. Disassemble the bolt, clean it and oil it 2. By hand recharging eject the cartridge from the cartridge chamber 3. Clean the cartridge chamber
4. Cartridge not fed	1. Dirty interior of magazine 2. Broken magazine walls or broken magazine feed lips 3. Fatigued or broken spring of magazine follower 4. Short recoil of bolt - dirty rifle	1. Disassemble and clean the magazine 2. Replace the magazine 3. Replace magazine follower spring 4. Disassemble and clean the rifle
5. Cartridge case does not extract	1. Broken extractor spring 2. Broken-off extractor claw	1. Replace extractor spring 2. Replace the extractor
6. Cartridge case does not eject	1. Short motion of bolt backwards - dirty rifle 2. Broken piston	1. Disassemble and clean the rifle 2. Replace the piston
7. Cartridge jumps out of the magazine	Magazine follower spring is too strong or feed lips are broken	Replace the magazine
8. Bolt is not retained by bolt catch after firing last round	1. Defective magazine or its spring	1. Replace the magazine or its spring

If the above-mentioned malfunctions cannot be fixed or if any other malfunctions reoccur, the rifle should be sent for repairs to an authorized gunsmith appointed and approved by the manufacturer.

CHAPTER 3 - STORAGE

1. Storing the rifle

The rifle should be deposited in a vertical position with the muzzle up or in a horizontal position either on a rifle rack or on a shelf. It can also be suspended by the sling. The bolt should be in the front position, the striker released and the safety catch wing in the vertical (locked) position. The magazines should be put in the magazine pouch and other accessories in cleaning kit bag.

When transported, the rifle should be placed in a special transport box or bag in order to prevent it from damage. If inadequate packaging is used when transporting the rifle, it is of utmost importance to protect the sight devices against damage by wrapping the front sight and rear sight in rags and filling the empty space in the box with rags in order to prevent the rifle from being battered about.

In any of the mentioned modes of deposition, the rifle must not be loaded!

The deposited rifle must be constantly kept safe and the keys from the locks of the racks, shelves, cabinets or safes holding the rifle must be kept in a secure place.

Do not plug the bore with paper, rags or other objects regardless of the storage conditions, or barrel bulge or additional damage may occur.

After terminating shooting, rifle must be cleaned each time. Special attention should be paid to cleaning of the bore and cartridge chamber. All accessories to the rifle must be kept in good condition, clean and appropriately deposited.

CHAPTER 4 - INSPECTION OF THE RIFLE

1. Principles of inspection of the rifle

Regular inspections of the assembled and disassembled rifle should be carried out regularly. The extent of disassembling should be determined by the inspecting person. The owner of the rifle should inspect it before leaving for the shooting range and during cleaning.

Along with the inspection of the rifle all specified rifle accessories should be inspected.

When not used the assembled rifle should be inspected once a month. On inspection of the rifle, it is necessary to check:

- whether there is any rusty tint on the metal parts of rifle, whether the metal parts are soiled, battered or scratched and whether the plastic parts of the rifle have split or cracked.
- whether the front sight or rear sight are damaged, whether the sighting gauge marks are opposite each other, whether the functioning of the slide and the rear sight plunger is correct;
- whether the magazines are undamaged

Inspection of the assembled rifle

When inspecting the assembled rifle, it is necessary to check:

a) **The functioning of the bolt:** On cocking the bolt, the motion of the components must be trouble-free, without seizing up, with considerable resistance on the part of the return spring. On releasing the bolt, this must move energetically forwards at which the bolt carrier must run as far as its extreme front position and lean against the face of the receiver.
If an empty magazine is shifted into the rifle, the bolt catch must retain the bolt in the open position when the bolt moves forward.
Correctness of feeding, extracting and ejecting may be verified by hand charging at which the magazine, inserted in the rifle, is loaded with practice rounds. In this way, the functioning of the magazine, of the extractor and of the ejector may be verified.
At the same time, the functioning of the magazine catch is verified. When inserting the magazine into the rifle, the magazine catch must audibly snap in behind the projection at the rear edge near the magazine feed lips. If not depressing the magazine catch, the magazine must not be released from the receiver.
After checking the functioning of the bolt, the striker spring should not remain depressed.

b) **The functioning of the trigger mechanism:** The functioning of the trigger mechanism should only be checked **when using practice cartridges.**
Insert a practice round into the cartridge chamber by hand charging; the safety catch wing is adjusted to the "Fire" position. In the position of the safety catch wing, the striker must be released by squeezing the trigger and audibly striking the firing pin. If the safety catch wing is adjusted in the "Safe" position, i.e., downwards, the striker must not be released upon squeezing the trigger. When adjusting any of the two positions, the safety catch must be turned to such a degree that an audible click is heard; to change the position of the wing, a certain force must be exerted.

c) **The correctness of the rear sight and the front sight:** It is necessary to check whether the rear sight leaf is lacking side clearance and is not bent. If the plunger is depressed, the slide must easily move along the leaf and must be forced down by the rear sight feather to the rear sight ramp in all positions. The plunger lug must be able to snap into all the notches on the leaf.
Regarding the front sight, it is necessary to verify whether it is damaged, whether the sighting gauge marks are opposite each other, and whether the adjustment for the height of the front sight is not impaired (this may be determined from the integrity of the drop of red lacquer inside the front sight cover).

d) **The functioning of the stock:** It should be checked in order to assure that the stock is tightly secured to the receiver, is steady and does not wobble significantly. The stock should also be checked for any cracks.

Inspection of the disassembled rifle

Before a disassembled rifle is inspected, all the components must be wiped dry. When the rifle is disassembled all the components must be carefully inspected in order to determine whether they are free of rust, whether they are soiled, crumbled off, battered, seized or excessively worn. Additionally, the **completeness of the rifle** should be verified.

Defective components which reveal fissures, rubbed-out spots, excessively worn active surfaces, stripped threads, loosened connections or those that are deformed and/or broken must be replaced.

When inspecting the bore, it is necessary to lift the barrel together with the receiver up to the height of the eyes and turn the other end of the barrel toward the direction of the best light. While slowly rotating the barrel, it is necessary to carefully inspect the grooves of the bore, starting from the muzzle to the direction of the receiver. In order that the walls of the bore may be better seen along all the length of the barrel, it is necessary to vary the distance of one's eye from the muzzle.

When inspecting the bore, the following defects or troubles may be discovered:

- the remains of burnt powder or rust that appears as a dark tint. Rust or remainders of burnt powder undistinguishable by the eye may be found out by means of a white cloth which will show dark brown or black spots after wiping the bore. Grey spots in the bore that do not leave spots on the cloth after wiping the bore are not a fault;

- rust that appears like dots or small drops on some spots or all over the bore shallow dark spots that remain after derusting

- pits caused by rust are pits in the metal, visible to the eye

- a copper coating which is caused by firing with projectiles provided with tomback jacket; they appear to the eye as a slight copper coat or bulge in the bore

- scratches in the shape of dashes, many times with distinct prolapses of metal on the bore surface

- rounding (wear, spalling of the chrome layer) of fields manifesting itself particularly on the left-hand edges of the fields; it occurs most often behind the cartridge chamber and near the muzzle

- dark spots and an irregular surface behind the cartridge chamber (spalled chrome), which is a symptom of burning up the transition cone

- a bulge in the shape of a transversal dark ring; a rifle with a barrel damaged in this way must not be used for firing unless the rifle is checked.

- bending of the barrel that manifests itself as an irregular length of shade in the bore when rotating the barrel; battered spots on the rear face wall of the barrel, and scratches in the cartridge chamber.

When inspecting the **piston** and the **gas adapter check:**

- whether the piston head is excessively burnt or battered;
- whether the gas cylinder is seized or burnt through and whether there is no deposit of carbon and impurities on the internal walls;
- whether the piston moves trouble-free without seizing in the gas cylinder.

When inspecting the **receiver check:**

- whether the guide bars, grooves and the active surfaces are scratched or rubbed by pressing; a glossy appearance to the surfaces of the projections on which the locking piece locks is permissible;
- whether the ejector is forced in, broken off or displaced in the grooves;
- whether the bolt catch is cracked, broken off or forced in;
- whether the safety catch holder is broken;
- whether the lacquer on the receiver is scratched off;
- whether the piston moves freely along the guide in the rear sight base.

When inspecting the **bolt check:**

a) **Bolt carrier:**

- whether the guide bars, grooves and active surfaces are scratched or rubbed by pressing; inspect if the face bearing surface is rammed down;
- whether chrome layer on the surfaces and edges is spalled or crumbled off

b) **Bolt:**

- whether the cartridge case bed and the opening for the firing pin are burnt off;
- whether there are fissures, pits or metallic deposits around the opening for the firing pin;
- whether the active surfaces are rubbed by pressing or rammed down;
- whether the end of the opening for the firing pin is flattened, i.e., whether the firing pin passes freely through the opening in the cartridge case bed; Pin must shift out of bolt's opening when the bolt is overturned by its own weight or, at the most, when tapping slightly with the bolt against the palm;
- whether the extractor claw is pressed with sufficient force in the bolt cartridge case bed;
- whether the extractor is clamped by the walls of its groove, i.e., whether it returns, after being deflected, energetically to the initial position;
- whether the extractor has fissures or whether the extractor claw is broken off or damaged in some other way.

c) **Locking piece**

- whether it moves freely in the bearings of the bolt;
- whether the edges of locking lugs are battered or deformed in some other way; a glossy appearance of the active surfaces of the locking lugs and of the upper (glide-over) surface is permissible;
- whether the locking piece tilts over by its own weight into the locked position;
- whether the chrome layer on the surfaces or edges is spalled or crumbled off.

d) **Striker:**

- whether the nose of the striker head is worn out to excess;
- whether the striker passes freely through the opening in the bolt carrier.

When inspecting the **trigger mechanism check:**

- whether the trigger, disconnector and sear pivot are free on their pins;
- whether the arm of the trigger mechanism feather is broken or bent and whether it is in the correct position under the sear;
- whether the sear is worn out to such an extent that it does not catch the striker reliably.

When inspecting the **stock** and **front handguards check:**

- whether the plastic parts are cracked, battered or deformed in some other way;
- whether the stock is loosened;
- whether the swivel on the stock is loosened or damaged;

2. Disassembling the rifle

The rifle is disassembled for the purpose of cleaning, preserving, for inspection and when replacing and/or repairing its parts.

There are two ways of disassembling the rifle:

- partial disassembling and
- complete disassembling.

Partial disassembling of the rifle is carried out by the owner for the purpose of common cleaning, preserving and inspecting.

Complete disassembling of the rifle is only carried out when replacing and repairing its parts at an authorized gunsmith workshop.

Disassembling and assembling too frequently harms the rifle as the wear on its components is accelerated.

When disassembling and assembling the rifle, the following rules must be observed:

- Disassembling and assembling of the rifle should be carried out on a table or bench; when in the field, this should be carried out on a clean and dry sheet.

- Every time, before disassembling the rifle, the magazine should be taken out and made sure there is no cartridge in the cartridge chamber.

- When separating and assembling the components, handle them with care, do not use force as it could cause damage.

The rifle is designed so that all the components and mechanisms may be easily taken out from and inserted back into the rifle. For this reason no other tools should be used for taking out and inserting components and mechanisms of the rifle other than the needle, otherwise the components can be damaged.

For common maintenance of the rifle it is sufficient to remove the upper handguard, take out the piston with the spring, remove the return mechanism and take out the bolt. This allows access to the trigger mechanism. **The rifle must be disassembled with its striker released.**

Disassembling the rifle partially

The rifle should be disassembled in the below-mentioned sequence and extent (Fig. 26):

1. magazine
2. return mechanism
3. bolt
4. upper handguard
5. piston with spring

Fig. 26 The Sa vz. 58 Sporter rifle in cal. 7.62 mm partially disassembled

a) **Taking out the magazine** (Fig. 27): Hold the rifle by the grip with the right hand and grasp the front wall of the magazine with the left hand. Lean the left-hand thumb against the magazine catch and push it forward. Simultaneously, tilt the magazine forward in the direction of the barrel and pull it out from the receiver's magazine well.

Fig. 27 Taking out the magazine

b) **Removing the return mechanism** (Fig. 28 - 29): With the left hand grasp the rifle from below by the receiver and by the thumb of the right hand, the palm of which leans against the top of the buttstock, depress the protruding end of receiver cover pin. Then grasp the knurled head of the pin by the right-hand thumb and index finger and pull the pin out to the right until an audible click is heard.

Fig. 28 Removing the return mechanism

Fig. 29 Removing the return mechanism

Grasp the top of the buttstock with the right hand and lean the right-hand thumb against the rear wall of the receiver cover. Through forward pressure of the thumb and an upward shift, move the base of the return mechanism out from the receiver recess, and by pulling backwards, pull all the return mechanism out of the rifle (Fig. 28). Or you can use the right hand for holding the rifle by the grip and place the palm of the left hand on the top of receiver cover with thumb behind the rear end of the cover. By pushing forward and lifting up, the cover can be removed from the receiver and pulled out (Fig. 29).

c) **Taking out the bolt** (Fig. 30): Hold the rifle with right hand by the grip or from below the receiver and point the muzzle to the ground and. With the left hand using the cocking lever, pull the bolt carrier backwards to a stop. With the use of middle finger and the thumb, take the bolt carrier out of the receiver. All the time the whole bolt assembly is being taken out, its front has to be pointing down, in order to prevent the striker from moving out of the bolt carrier shaft and bolt falling out.

Then take the bolt carrier by the left hand and with the right hand grasp the striker by its head and pull it out of the bolt carrier. While doing this, turn the striker slightly to the left until the projection of the bolt carrier passes through the cross groove to the neighboring through groove. Continue pulling the head of the striker, shift the striker completely out of the bolt carrier. The bolt is thereby released. Remove the locking piece from the bolt by tilting it upwards.

Fig. 30 Taking out the bolt

d) **Removing the upper handguard:** Depress the projecting part of barrel guard pin 552 with the right hand thumb. With the right hand thumb and index finger grasp the barrel guard pin by its knurled head and pull it entirely to the right. After shifting the barrel guard pin out, lift the rear part of the barrel guard up a bit, with the right hand, and tilt it upwards in the direction of the muzzle. In this way, the tips of the barrel guard are shifted out from the grooves of the gas adapter and the barrel guard may be removed from the weapon by pulling it backwards.

e) **Removing the piston** (Fig. 31): Hold the rifle from below with one hand and grasp the piston with the other hand and push it backwards to a stop against the action of the piston spring. Then tilt the piston upwards from the gas cylinder. In this way, the piston head comes above the upper wall of the gas cylinder; by pulling the piston askance forward, take the piston out from the recess in the rear sight base. If the piston spring has not been shifted out together with the piston, shift it out by using the rear end of the piston.

Fig. 31 Removing the piston

3. Assembling the partially disassembled rifle

The partially disassembled rifle should be assembled in the following order:

a) **Insert the piston with the spring:** Shift the piston, with the spring over its cylindrical part, in the recess of the rear sight base askance downwards to a stop. Tilt the piston head to the round of the gas cylinder and release the piston. Through the action of the spring the piston comes to its front position.

b) **Put the upper handguard on:** Make the tips of the upper handguard front hoop snap into the grooves on the gas adapter and tilt the upper handguard. Shift the upper handguard pin completely to the left. The upper handguard is thus locked against falling out.

c) **Assemble the bolt:** Mount the locking piece with its joints into the bearings of the bolt. Insert the bolt in the recess in the bolt carrier near the bridge. Shift it forward in order to engage the grooves in the carrier. Shift the striker in the bolt carrier so that the gauge mark on the striker is opposite the gauge mark on the rear wall of the bolt carrier. Then turn the striker by the whole length of the gauge mark to the right and shift it to a stop in the bolt carrier.

d) **Put the bolt carrier into the receiver:** grasp the assembled bolt carrier with one hand so that the thumb leans against its rear face and the middle finger against its front face. Hold the rifle from below with the other hand by the receiver with the muzzle pointing slightly downwards. Insert the bolt carrier from above in the rear part of the receiver. Shift the inserted bolt carrier as far forward as possible. The striker will remain retained by the sear. Set the safety catch to "Fire" position and squeeze the trigger; the striker is then released by the sear.

e) **Insert the return mechanism:** First of all, partially shift the return spring in the cavity of the bolt carrier and then the stiker spring in the opening of thestriker. Push the front part of the cover down in order to engage the grooves in the bolt carrier and by pushing forwards and downwards shift the projection of the base in the recess in the rear part of the receiver. Lock the return mechanism by shifting the pin of the receiver cover to the left until an audible click is heard.

Cheek piece can be attached to the buttstock by hooking its shorter edge to wider side of the top of the buttstock, pushing its wider side down and sliding it slightly forward or backwards until the projection on the inner side of the cheek piece falls into the opening in the stock (Fig. 32).

Fig. 32 Attaching the cheek piece

Recoil pad should be atatched to the butt part of the stock in such a way that wider end of the recoil pad is at the lower end of the butt and narrower end of the pad at the buttstock´s upper end. All four rubber studs should be fully inserted into the particular openings of the butt part of the stock in order to prevent accidental falling off the stock. (Fig. 33)

Fig. 33 Attaching the recoil pad

CHAPTER 5 - MAINTENANCE

1. The main principles of rifle maintenance

One of the conditions for reliable functioning, accuracy of fire and the service life of the rifle is correct and timely cleaning and preserving as well as inspections. The rifle must always be kept in good order and clean.

Maintenance and care of the Sa vz. 58 Sporter rifle is divided into
- daily care,
- and monthly care.

Daily care of the rifle should be carried out as soon as possible after shooting. The extent of the care is determined according to the needs which depende on the conditions of the shooting, from the weather conditions and the like. After returning from shooting, the rifle should be partly disassembled and all the main parts completely cleaned. Over the following 3 to 4 days, check the rifle for rust. If, in doing this, it still shows traces of impurities due to combustion products or rust, the cleaning procedure should be repeated.
Only after proper cleaning and wiping the rifle dry, it can be preserved with oil.

Monthly care should be carried out even if the rifle is not fired within this time. At monthly checks, the rifle should be checked for any possible rust stains and sufficient oil preservation.

If the above-mentioned principles are observed, any inadequate deterioration of the technical condition of the rifle cannot occur.

2. Cleaning and preserving agents

When cleaning and preserving the rifle, only specified cleaning and preserving agents of high quality should be used.

To clean the rifle only the following material should be used:
- clean soft rags (colored as well as white) to clean and preserve the components
- brass bore brush
- cotton patches
- high quality gun oil
- horsehair brush (part of the rifle accessories).
- toothbrush

To preserve rifles the following should be used:
- RIG to protect the metal parts of the rifle against corrosion. This product may be used all year.
- gun oil to lubricate the friction surfaces in the rifle that are in use

The cleaning agents must be protected from dust and moisture contamination.

3. Procedure in cleaning and preserving the rifle

After finishing shooting, the rifle should be partially disassembled for cleaning. Complete disassembling of the rifle for cleaning is only necessary when the rifle is strongly soiled or when it has been exposed for a longer period to moisture, snow and the like. Complete disassembling of the rifle for the cleaning purposes should only be carried out by an authorized gunsmith.

When cleaning and preserving rifle parts, it is necessary to proceed as follows:

a) The bore should be cleaned from the side of the muzzle. In order to do this, one must unscrew both parts of the cleaning rod. Shift the end of the cleaning rod, provided with an annular groove, in the longitudinal opening in the unscrewed oil can plug and lock it by the needle which may be pushed through the transversal opening in the oil can plug so that it can pass with a certain difficulty through the bore being cleaned and so it fills the grooves well. Then soak the patch in gun oil and run it thru the bore several times. Then slip the muzzle cap over the thread protector and move it around a slight amount so that the thread protector safety catch snaps in the cut-out of the muzzle cap. Grasp the cleaning rod by the needle and the plug, and continuously without any force draw the cleaning rod seven to ten times along all the length of the bore. After this, remove the muzzle cap and pull the cleaning rod out.

Then remove the oiled cloth off the cleaning rod and pull a dry clean cloth through. The cleaning with the cloth should be repeated several times if the cloth shows brown or black spots due to rust or combustion products. If those spots appear even after wiping the barrel out several times with the cloth, it will be necessary to repeat the cleaning with the aid of a cleaning agent and then again wipe the bore dry with clean patches.

When having drawn the cloth through for the last time there are no longer any traces of combustion products from powder (black or brown spots) or traces of rust, move on to cleaning the cartridge chamber. In order to clean the cartridge chamber and the gas cylinder, screw the oakum cleaning rod into the oil can plug from the threadless side of the opening. Then clean the cartridge chamber in the same way as the bore, at which the oil can when in a vertical position serves as a handle for the oakum cleaning rod.

After having finished cleaning the bore and the cartridge chamber, pull once more all the bore through and dry with clean patches. Then carefully inspect the bore against the light while slowly rotating the barrel in your hands. It is especially necessary to carefully inspect the edges of the grooves near the muzzle and near the cartridge chamber, i.e. places from which impurities are the most difficult to remove. In order to check the condition of the cartridge chamber and that of the bore, a reflecting mirror can be used.

If the inspection demonstrates that the bore and the cartridge chamber are completely clean, immediately apply a slight layer of preserving RIG. Draw a patch saturated with RIG into the cut-out of the cleaning rod. The patch must be of such a shape so as to pass easily through the bore. Then draw the cleaning rod two times to three times continuously through all the length of the bore so that the preserving agent may fully adhere to the grooves and fields of the bore and to those of the cartridge chamber and form a thin continuous layer.

Excessively lubricated parts get quickly contaminated which is why it is necessary to apply only a fine layer of preserving agent by means of a greasy rag. When lubricating the recesses, grooves and gaps, it is necessary to roll the patch round a stick.

Preserving the bore with an oil gun protects it against corrosion for only a few days.

If the wiped dry bore is left without a preserving agent for more than an hour, it grows damp due to the effect of ambient air. The preserving agent must not be applied until the bore is re-wiped out dry with a clean dry cloth.

If rust is found during the cleaning, soften it with a cleaning solution, with kerosene or a preserving agent and then wipe it out with a clean patch. If the remains of powder combustion products and rust cannot be removed from the bore in the above-mentioned way, the rifle should be given to an authorized gunsmith.

b) The gas cylinder should be wiped out with a patch saturated with a cleaning agent and then wiped out dry. Cleaning should continue until all deposits of powder gases are removed. The gas cylinder when wiped dry should be preserved with a thin layer of RIG.

c) When cleaning the piston, pay attention to the disposal of deposits from the circumferential groove on its head. After washing in the cleaning agent, the piston should be wiped with oil.
After removing the impurities, the piston should be wiped dry with a clean rag and preserved with a thin layer of RIG.

d) The receiver, the bolt and the non-disassembled trigger mechanism, the rear sight and the return mechanism may be cleaned by means of wooden sticks wrapped with rags soaked in the cleaning gun oil; openings, grooves, cut-outs and recesses should be cleaned with pointed wood sticks. After cleaning, the components should be wiped dry with a clean rag and preserved with a light coat of RIG. Also of importance for checking, after cleaning the non-disassembled trigger mechanism, is whether the positions of the trigger mechanism components are correct, especially the positions of the arm of the trigger mechanism feather.

All components strongly soiled with powder combustion products should be immersed in the cleaning solution for a period of up to half-an-hour; the remainders of the cleaning solution must, however, be disposed of carefully. Cleaning gun oil or its emulsion should not be left in the bore.

e) The plastic parts of the assault rifle, i.e., the stock and upper and lower handguards and magazines should be wiped with a moist cloth or silicon oil and then wiped dry with a clean dry cloth.

f) The lacquered parts of the rifle, such as the external surface of the barrel and receiver, that of the bolt carrier, trigger guard and return mechanism cover should not be preserved; they should be wiped with a oily cloth and then wiped with a clean dry cloth.

After having applied the preserving agent, the rifle should be assembled. If the preserving agent gets wiped off at some points during assembly of the rifle, it will be necessary to restore the preserving agent layer.

CHAPTER 6 - REPAIRS

1. Repairing the rifle

The rifle owner should only carry out minor repairs within the scope of repairs of malfunctions described in the Troubleshooting section of this manual (Part II – Chapter 2).

Any other repairs should be performed by an authorized gunsmith only. Non compliance with this rule may result in serious damage to the rifle or the owner’s health.

General provisions

All rifles supplied to buyers have already been zeroed in by the manufacturer of the rifle.

The zeroing of the rifle should be checked if:

a) after buying the rifle:
   - in new rifles only in case of a suspicion that the factory zeroing was impaired
   - in old rifles every time

b) whenever unusual deviations in hits or unusual dispersion are found out during firing

c) after replacement of components or after repairs that might impair the zeroing.

Rifles are again also zeroed in after major repairs by an authorized gunsmith (replacement of the barrel, rear sight and the like) which impair the zeroing.

Before checking the zeroing, the rifle must be carefully inspected and repaired if necessary. The rifle barrel must be wiped out dry before firing.

The checking of the zeroing should be carried out under weather conditions that are favorable for firing (on warm, windless and clear days) in an open shooting range protected against wind or in a indoor shooting range.

To check the zeroing and to zero in, only 7.62 x 39 mm Ball cartridges should be used. All cartridges must be of the same production series.

The rifle zeroing should be checked at a range of 100 meters, for which the rear sight is set to the range "3". Firing is carried out on a target of at least 1 meter in height and 0.5 meters in width. The zeroing sheet is fixed to a target.

The zeroing sheet (Fig. 34) is a black rectangle of 35 cm in height and 25 cm in width.

The aiming point is the middle of the bottom edge of the zeroing sheet (a black rectangle) which is to be approximately on a level with the rifleman's eye (on the level of the barrel of the rifle being checked, when sighted).

The normal position of the mean point of impact should be marked on a vertical line passing through the aiming point. This mean point of impact, when the rear sight is set to 3, is to be at a height of 28 cm above the **aiming** point and is, simultaneously, the **checking point** when determining the accuracy of the zeroing of the rifle. Around the **checking point**, a checking circle of 10 cm in diameter is circumscribed.

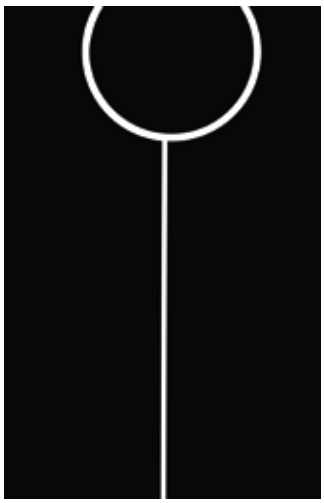


Fig. 34 Zeroing sheet

Firing is done in a prone position with support. A bag filled with sand can be used as a support. When firing, the left hand holding the rifle must rest on the bag.

Procedure in checking rifle zeroing and zeroing in

The zeroing rifleman loads the magazine with 4 cartridges and fires 4 shots, accurately and steadily aimed at the middle of the bottom edge of the black rectangle, while during fire, neither the position of the rifleman's body nor that of his left hand are changed.

After termination of firing (of those 4 shots), the target is inspected and the dispersion grouping and the position of the mean point of impact evaluated. **The rifle is considered as zeroed in** if all the four hits - in an extreme case 3 of the hits (if one hit shows a great deviation from the others) – may be covered with a **circle of 18 cm in diameter** and if, at the same time, the mean point of impact is not deviated by **more than 5 cm to any side from the checking point.**

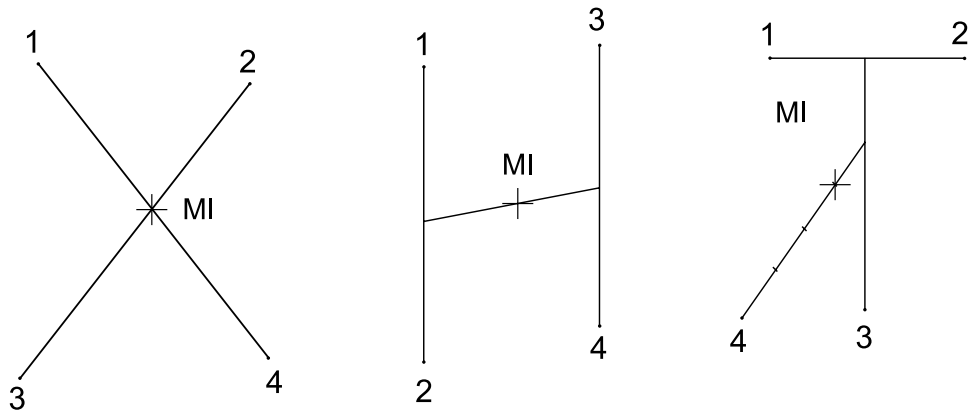
Determination of mean point of impact

Determination of the mean point of impact on the basis of the **four hits /impacts/**
(Fig. 35).

For a symmetrical dispersion of the hits, the mean point of impact may be determined by one of the following methods:

a) join two and two hits with straight lines crosswise; the point of intersection of the two straight lines is the mean point of impact (Fig. 35a)

b) join by means of straight lines always two and two hits so that the straight lines do not cross each other. Bisect each of the straight lines into two halves and join again the bisecting points by means of a straight line. The middle of this straight line is the mean point of impact (Fig. 35b).



a **b** **c**

Fig. 35 Determination of the mean point of impact on the basis of the four hits /impacts/

For an asymmetrical dispersion of the hits, the mean point of impact shall be determined as follows:

1) join two arbitrary hits /impacts/ with a straight line and bisect the distance between them

2) join the obtained point with the third hit and divide the distance between them into three equal sections

3) join the dividing point that is closer to the two first hits with the fourth hit and divide the distance between them into four equal sections; the third dividing point starting from the fourth hit is the mean point of impact searched for (Fig. 35c).

If one of the four hits /impacts/ is considerably deviated from the others, do not take it into account and use three hits method.

The mean point of impact on the basis of the **three hits** (Fig. 36) shall be determined as follows:

1) join any two of the hits with a straight line and bisect the straight line

2) join the middle of this straight line with the remaining third hit

3) divide this new straight line into three equal sections; the dividing point that is closer to the connecting line of the first two hits is the mean point of impact.

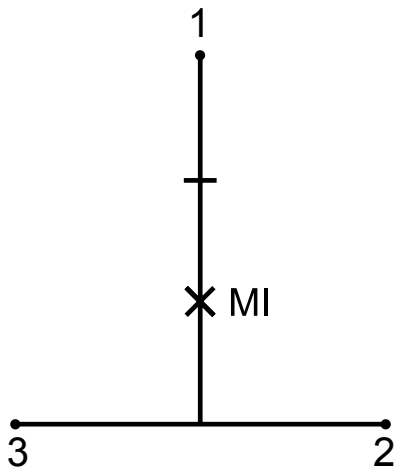


Fig. 36 Determination of the mean point of impact on the basis of the three hits /impacts/

If the hits /impacts/ cannot be covered with a circle of 18 cm in diameter or if the mean point of impact is deviated from the checking point to any side more than 5 cm, but not more than 12 cm, the cause of such a great dispersion or the cause of great deviations of the hits from the checking point should be found. After finding out the cause, the authorized gunsmith should repair the rifle and the firing should be repeated. If the result of the repeated fire is again unsatisfactory, i.e. the **hits cannot be covered with a circle of 18 cm in diameter or the mean point of impact is deviated from the checking point more than 12 cm**, the rifle should be taken to a authorized gunsmith to be zeroed in.

If the dispersion grouping of the rifle complies with the specified condition (the hits may be covered with a circle of 18 cm in diameter), but the deviation of the mean point of impact from the checking point is greater than 5 cm, but not exceeding 12 cm, the rifle should be taken to a authorized gunsmith to carry out, in dependence on the position of the mean point of impact, an appropriate displacement or correction of the front sight for height. The front sight should be screwed in a bit (lowered) if the mean point of impact is situated below the checking point, or it should be unscrewed a bit (raised) if the mean point of impact is above the checking point. The front sight pin should be displaced to the left (to the right) if the mean point of impact is on the left (on the right) from the checking point. By varying the position of the front sight and through repeated firing such a position of the front sight must be obtained at which the deviation of the mean point of impact from the checking point to any side does not exceed 5 cm.

Changing of the height of the front sight pin by 1 turn (0.5 mm) or displacement of the front sight pin to the side by 0.5 mm changes the position of the mean point of impact by 14 cm when firing at 100 meters.

If both the dispersion grouping and the position of the mean point of impact comply with the above-mentioned requirements, the checking of the rifle zeroing is finished.

If the side position of the front sight was changed when zeroing in the rifle, a new gauge mark on the front sight pin opposite the gauge mark on the front sight holder should be made. The old gauge mark on the front sight pin should be removed. It is forbidden to stamp a new gauge mark on the front sight holder. If the position for the height of the front sight was impaired, a drop of lacquer should be applied again.

The result and data of the zeroing (checking of zeroing) of the rifle should be written on the zeroing sheet.

Rifle malfunctions and troubles impairing the zeroing

In the course of using the rifle or during the checking of the zeroing, the following malfunctions, due to displacement of the mean point of impact, may occur:

a) Side displacement of the front sight pin, front sight top bent or impaired by impact – projectiles deviate to the side which is opposite to that of the front sight deviation.

b) Bent or beveled rear sight leaf – projectiles deviate to the side to which the back sight notch is deviated.

c) Muzzle of bore damaged by impact – projectiles deviate to the side which is opposite to that with the muzzle damage.

Dispersion enlargement may be caused by the following malfunctions or troubles:

a) Side wobbling of the rear sight; after every shot, the leaf may be in a different position, thus causing enlargement of the dispersion for width.

b) Wobbling of the rear sight slide: the plunger lug does not retain the slide in a steady position on the leaf; when firing, the slide spontaneously changes its position on the leaf, thus causing enlargement of the dispersion for height.

c) Worn-out (widened) bore in both the muzzle and the cartridge chamber.

d) Worn-out, rounded or crumbled-off edges of the fields of the bore.

e) Rusty bore, pits caused by rust, scratches in the bore.

The rifle shall be zeroed in by 8 shots when:

a) the mean point of impact of the 8 shots lies within a circle of 8 cm in diameter, with the checking point being the center of the circle

b) dispersion of those 8 shots must lie within a circle of 20 cm in diameter when mea sured from the centers of the most distant hits/impacts/. If one of the hits deviates, it may be omitted and then the dispersion is that made of the seven hits/impacts/, but this dispersion must not exceed a circle of 20 cm in diameter, either. The measuring should be done in the same way as in the previous case and the position of the mean point of impact is determined from those seven shots. As a deviated hit/impact/ is considered such a hit that is more distant from the mean point of impact made of the remaining 7 shots than is the diameter of the circle circumscribed for the remaining seven shots

c) correction of the front sight is permissible within the extent of the deviation of the longitudinal axis of ± 0.5 mm and ± 1 mm for the height from the mean value of the front sight (54.6 mm when measured from the opposite projections of the front sight holder).

The rifle is considered as zeroed if the mean point of impact lies within a circle of 8 cm in diameter and if it is possible to cover all 8 (or 7) hits /impacts/ with a circle of 20 cm in diameter.